

Division of Drinking Water
1996 Annual Report

December 1996



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For more information or
additional copies of this report contact:

Division of Drinking Water
Airdustrial Park Building 3
PO Box 47822
Olympia, WA 98504-7822
(360) 753-3466

Toll free 1 (800) 521-0323 or,
Email DWINFO@hub.doh.wa.gov

Bruce Miyahara
Secretary of Health

B. David Clark, Director
Division of Drinking Water

Judy J. Welch, Editor

Letter From the Director

Dear Reader of the 1996 Annual Report:

In this year's report we are not only providing basic information about the Drinking Water Program, but are also focusing on key health issues related to drinking water and public water supplies. The differences reflect a number of changes that have occurred as the state's approach to public health issues continues to evolve. We have highlighted what we believe will be the key challenges facing us in 1997.

Development of Public Health indicators: Most public water systems in Washington are essentially well operated. However, some water systems continue to have difficulty with various aspects of protecting the public's health. To better describe the health risk related to this diminished health protection, the Drinking Water Program has begun to develop indicators. These proposed indicators are only one component of the DOH effort to better evaluate and communicate public health risk. The health indicators currently being proposed reveal that 20 percent of Washington's residents and visitors are exposed to known health risk through their drinking water. This year's report contains the drinking water program's response to these various public health risks.

Source Protection: A cornerstone in providing safe and reliable drinking water and a key provision in the new federal Safe Drinking Water Act is protecting current and future supplies of drinking water. Currently DOH is working with water system purveyors, local governments and other agencies to implement effective source water protection measures for drinking water supplies.

Small Water System and Adequate Operation: For several years the number of small water systems, and the problems associated with them, have been increasing. One of the most important charges for DOH is to establish a program that assures that all public water systems have the technical, managerial and financial capability to remain in compliance with all pertinent regulations. Our current focus is on new systems being created, but will soon be expanded to cover all systems.

The past year has seen a number of major policy initiatives that have led to significant changes in the way government operates. These include:

Reauthorization of the Safe Drinking Water Act (SDWA): In August of 1996, after three years of effort, Congress comprehensively overhauled the SDWA. These revisions will allow Washington to tailor its requirements to state circumstances, focus on highest health priorities, and reduce the burdens on the numerous small water systems in the state. Among its many new provisions, the new federal law does the following:

- Provides numerous opportunities for state flexibility in the administration of federal requirements, particularly in monitoring and treatment requirements for small systems.
- Authorizes funding state-managed programs for financial assistance to water system capital needs and the State Revolving Fund program, to which Congress appropriated \$1.275 billion for the current federal fiscal year. (Washington's share should be approximately \$30 million this year.)
- Requires, and provides funding for, the development of new or expanded programs in such areas as source protection, water system management, certification of water system operators, and technical assistance, in order for states to be able to use this new flexibility and to avoid losing a significant portion of their State Revolving fund allocation (see Section 4).

Public Health Improvement Plan: Since its presentation to the 1995 Legislature, the Public Health Improvement Plan (PHIP) has been the blueprint for the delivery of health services to the people of Washington. Among many key elements are (a) building the capacity of local governments and local health jurisdictions (LHJs) for delivery of direct health services, (b)

Letter from the Director (cont.)

partnerships between all levels of government and other stakeholder groups, (c) focusing on issues of high public health priority, (d) maximum utilization of cost-effective preventative programs, (e) development of assessment methods to allow evaluation of program effectiveness and the public health of people in the state, and (f) development of both state and local funding sources that are adequate and stable.

The Drinking Water Program is making progress in these areas, as evidenced by an increasing number of written agreements with local jurisdictions that delineate respective roles and responsibilities in regulating water systems. These are limited in their scope because of the unavailability of state funding for at least a share of the costs of providing such services. The Drinking Water Program has also developed a comprehensive set of performance measures by which the program will, over time, be able to evaluate its efficiency and effectiveness.

Growth Management Act: The Growth Management Act (GMA) which passed in 1990 requires most local governments to develop land use plans, policies, and development regulations aimed at accomplishing a variety of statewide goals. The GMA included provisions authorizing interested parties to appeal locally-adopted GMA provisions to one of three regional Growth Management Hearings Boards (GMHB). If a GMHB ruled against the city or county action, it could order that city or county to revise the resulting document to be consistent with GMA. Until the document was revised, it remained in effect, even though it did not comply with GMA. In 1995, based on the recommendations of the Regulatory Reform Task Force, the legislature gave each GMHB the authority to invalidate GMA documents, either partially or totally, if a GMHB found that continued use of the documents “would substantially interfere with the fulfillment of the goals” of GMA. The new invalidation authority has had a dramatic impact on land development with a direct effect on the ability to develop and expand public water systems.

Environmental Protection Agency (EPA) National Needs Survey: EPA published the results of its 1995 National Needs Survey of water systems identifying Washington’s total need, both current and through the year 2014, at over 4 billion dollars. The Needs Survey is the first comprehensive national evaluation of the capital needs of federally-regulated water systems. DOH administered the survey in Washington, which included obtaining information from over 100 systems, of all sizes. EPA used the information to develop estimates of the capital needs for all Group A systems.

The estimates in the Needs Survey will provide the basis for EPA’s allocation of federal State Revolving Fund (SRF) money to each state for the next several years. Unless changed by Congress, the formula developed by EPA will determine each state’s share of the SRF appropriation made by Congress, beginning with the one to be made in 1997. Washington has tentatively been allocated just over \$31 million for the current fiscal year as its share of the national total of \$1.275 billion appropriated by Congress for the year. EPA expects to have funding available to states by the beginning of March 1997.

Water Supply Advisory Committee (WSAC): An assessment of the Department of Health’s Drinking Water Program requested by the 1995 legislature in E2SSB 5448 was completed by the WSAC. The report contains the findings and recommendations of the WSAC regarding the organization, functions, service delivery, and funding of the agency’s Drinking Water Program. It represents nearly a year and a half of dedicated work. In general, the WSAC recommends increased resources be provided for certain categories of activities, particularly as they relate to utilization of new authority and funding under the revised federal act. To the extent that some recommendations may be implemented administratively, the agency is moving forward, and in fact has already begun implementation of some. To the extent either legislative or budget changes are required, the agency’s plan for implementation has been forwarded to the Office of Financial Management to be considered for inclusion in the Governor’s FY 1997-99 State Budget and as potential agency request legislation.

This is important to Washington now. The people of Washington expect and deserve safe drinking water. The recent federal law changes offer an opportunity to make significant steps toward reaching that goal. However, in order to seize this opportunity the state will be required to step up to the challenge. By working together we can develop a strong and resilient system that provides ongoing protection, effective and affordable treatment and delivery, and accessible information to safeguard public health. The WSAC urges that we begin the process immediately.

Letter from the Director (cont.)

Program Accomplishments:

- An Operations manager was appointed and began directing, coordinating and overseeing field operations by our three regional offices and the activities of the Assurance Section. Besides conducting routine coordination efforts, he is focusing on addressing statewide issues relating to how the program carries out its responsibilities. With these changes we can expect a more consistent, smooth-running and efficient program.
- This past year the Division undertook a major effort to improve its information management system. A consultant conducted a survey of the program's information management needs for the next five years. This assessment found that only 50 percent of the needs identified are currently supported by the data system. The Division used this information to develop a feasibility study which detailed how these needs would be met. The enhanced capabilities, which increase the quantity, accuracy and accessibility of recorded information, will facilitate the regulation of public water systems and the protection of the health of Washington's citizens.

Local Health Jurisdictions and other agencies and the public need access to the Division's data. This project will improve reciprocal access to statewide water quality data. The state needs to provide a system to Local Health Jurisdictions which will facilitate delegation of authority for regulation of public water systems to LHJs.

- Staff have been working on the revision to the Division's Waterworks Standards. The Waterworks Standards provide guidelines to the engineering profession in the design and construction of Group A public water systems. The proposed changes to Chapter 246-290 WAC reflect a performance-based approach to design, as well as a methodology to evaluate the water system's ability to provide service. The intent is to make sure that minimum standards for public health protection provide the foundation for design of public water systems. It is also meant to provide a consistent approach for the Department to assess the capability of the system to provide an adequate and safe supply of potable water in a reliable manner at all times.
- Washington and other states have begun development of State Revolving Fund (SRF) programs to provide financial assistance to water systems, as authorized by Congress this year as part of the reauthorization of the SDWA.

Each year is always a challenge in the Drinking Water arena, and I look forward to the opportunities that we anticipate 1997 may bring. I hope that the information in this report will give the reader a better understanding of what we do to protect the public's health, and how we do it.

Sincerely,

B. David Clark, Director
Division of Drinking Water
Washington State Department of Health

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Section 1 - Overview

Washington's Drinking Water Program and the state and federal Safe Drinking Water Acts

Washington State regulates water systems both under state law and under a formal agreement with the Environmental Protection Agency (EPA) implementing and enforcing the federal Safe Drinking Water Act (SDWA). The annual Public Water Supply Supervision grant received from EPA in return, and meant to cover 75% of the state's costs for carrying out this responsibility, has not kept pace with new requirements under the SDWA.

The mission of the Washington Department of Health (DOH) Drinking Water Program is to protect the health of the people of Washington State by assuring safe and reliable drinking water. Drinking water protection is an essential public health program. Meeting the objective of safe and reliable supplies may best be accomplished through a cooperative effort that involves not only DOH and local health jurisdictions, but also consumers, water utilities, local governments, and other state and federal agencies.

Reducing or preventing risks posed by inadequate water supplies has been a fundamental part of public health programs for well over 100 years. The U.S. Public Health Service began administering drinking water standards in 1914. Within Washington, the supervision of public water supplies has been a shared responsibility between both the state and local health jurisdictions. The DOH Drinking Water Program is responsible for administering both federal law under the Safe Drinking Water Act (SDWA) and rules adopted by the

Environmental Protection Agency (EPA), and the state Safe Drinking Water Act enacted by the Washington Legislature. Both are implemented under state rules adopted by either DOH or the State Board of Health (SBOH). Congress enacted the SDWA in 1974, and most recently amended it in August, 1996 (see separate article under Section 3). Its provisions include water quality standards and other requirements related to sampling, treatment, source protection, and public notification. The SDWA applies to approximately 4200 water systems in Washington, serving water to nearly 4.5 million people.

Since the late 1970's the state of Washington has had a formal agreement with EPA wherein the state accepts full authority and responsibility for implementing and enforcing the SDWA within the state's borders. This arrangement is known as "state primacy" for administering the federal law; 49 states have this arrangement with EPA. In exchange, DOH receives an annual Public Water

Supply Supervision (PWSS) grant from EPA that is intended to cover 75% of the state's costs for carrying out this responsibility. However, as new requirements under the SDWA have increased since Congress amended it in 1986, federal funding to state programs has not kept pace. Washington's PWSS grant currently covers approximately 30% of program costs, but EPA expects states to fully implement SDWA requirements, even if under a "prioritized" basis.

DOH has agreements with local health jurisdictions that describe the respective roles and responsibilities between DOH and each jurisdiction for carrying out state laws regarding the regulation of drinking water systems, particularly the very small systems not subject to the SDWA. These agreements are systematically updated. As the state fully implements the Public Health Improvement Plan (PHIP) and develops increased program capacity at these local jurisdictions, the division of responsibilities between DOH and local entities may change significantly.

How Washington's Drinking Water is Delivered

13,082 small public water systems (community systems between 2 and 99 residential services) and 1,855 small non-community systems, serve less than 5% of the state's total population, yet represent 85% of the state's public systems. The larger systems (those with over 1,000 connections) represent less than 2% of the state's public water systems, but serve 71% of the state's total population.

Nearly 4.6 million of Washington State's 5.5 million population are served by one of the 15,658 public water systems in Washington. By Washington State law, public water systems are defined to be all water systems serving more than one single family residence or more than four connections on the same farm.

Most of the state's public water systems can be considered small. For example, 13,082 public water systems have between two and 99 residential services. In addition, there are 1,855 small non-community systems. These small public water systems serve less than 5% of the state's total population, yet represent 85% of the number of the state's public systems. The larger systems --those with over 1,000 connections-- represent less than 2% of the state's public water systems. However, these 190 larger systems serve 3.9 million

people or 71% of the state's total population.

Of the 15,658 public water systems ownership is comprised of 1,768 systems publicly owned by federal, local and state government and 13,890 privately owned systems.

Public water systems are categorized by the number of connections or population they serve. The two categories of water systems are "Group A" and "Group B".

Group A systems serve 15 or more connections or 25 or more people. They may be either "Community" systems, serving residential populations, or "Non-Community" systems, serving non-residents. Non-Community systems may be further divided into Non-Transient Non-Community, providing drinking water to the same people over a period of time (such as a school or business) and Transient Non-

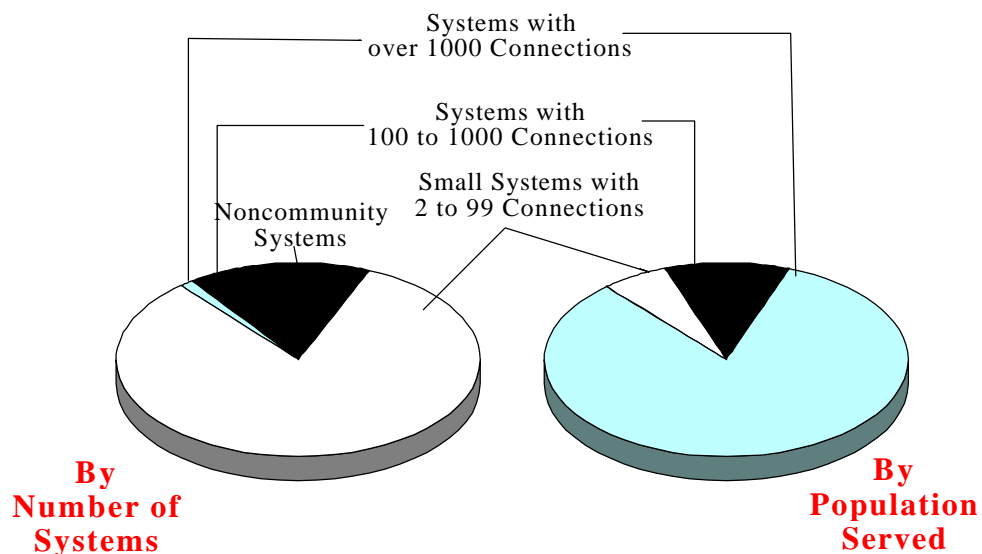
Community, providing water to changing populations (such as campgrounds or restaurants). Group A systems are subject to both federal water quality standards under the SDWA, and to state laws and regulations.

Group B systems, generally serving two to 14 connections and fewer than 25 customers, are public water systems not subject to the SDWA. Group B systems, though not governed by the SDWA, are subject to state law and local ordinances regarding water quality and operations. In addition to normal residential and commercial development, the growth of Group B systems has been encouraged by the statutory exemptions from the state's water right permits process for wells that use small amounts of water (enough for six to ten houses).

Ownership Type

	Group A Comm	NTNC	TNC	Group B
Public	569	130	484	585
Private				
Private/Non-Profit	960	61	404	4452
Private/Profit	800	95	681	6437

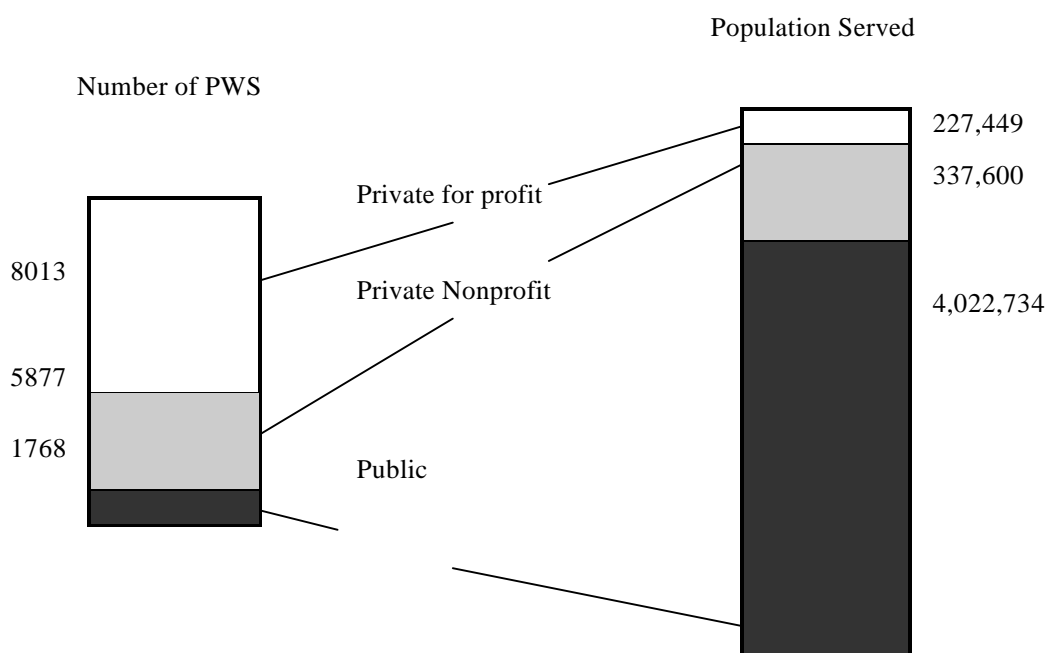
Public Water Systems



Group	Type	Number of Systems	Population Served ¹
Group A	Non-Community	1,855	6,987
	Community <100 connections	1,608	152,858
	Community 101-1000 connections	531	435,722
	Community > 1000 connections	190	3,895,696
Group B		11,474	96,520
Totals		15,658	4,587,783

¹ Population represents the number of individuals utilizing the public water system as their primary source of drinking water

Public Water Systems by Ownership Type



The State of Washington's Water Systems

There are a significant number of threats to public health currently being faced by the state's water systems. Each public water system is responsible for preventing health risks related to water contamination. Providing individuals with information about their water supply, particularly contaminants and potential health risks, empowers people to make informed decisions related to improving their own health protection.

A wide variety of illnesses, ranging from rapid onset gastroenteritis to much slower developing cancers can be spread through contaminated drinking water. Depending upon the contaminant, an individual may become sick after a single drink of water or only after decades of exposure. Protection of the public's health from waterborne illnesses depends upon the consumer having a safe and reliable drinking water supply. As one means of protecting drinking water, public water systems are required to routinely monitor their water quality and test for contaminants for which the State Board of Health has established public health standards.

When water quality exceeds a public health standard, there is a risk to those consuming the contaminated water. However, with drinking water, contamination is not the only potential health risk. Water quality exceeding standards, in conjunction with other water supply factors, influence the health risks to Washington's residents and visitors. The water supply factors which contribute to public health risks are described on page 19 in Water Quality and Public Health Risk.

Disease Outbreaks-In 1996, there were no waterborne disease outbreaks recorded statewide. Nonetheless, it is likely that some did occur. The symptoms of waterborne diseases are frequently similar to those of other common illnesses such as the flu or food poisoning. In fact, most

waterborne diseases are not uniquely spread by drinking water. Illnesses resulting from drinking contaminated water may also be spread simultaneously through several other modes such as food, air, or by person to person contact. For these and other reasons it is often difficult to attribute an illness to water quality with certainty.

Contamination: Naturally occurring chemicals, man-made substances, and microorganisms can all contaminate drinking water. Since many contaminants may create a health risk to those drinking the water, the best form of health protection is reducing the potential for contamination. However, even public water systems making strong efforts to protect their supplies can sometimes find that contamination has occurred.

Microorganisms. A wide variety of microorganisms that cause illness can exist in water supplies, and there is no feasible method to routinely monitor drinking water for all of them. However, most are introduced into water through animal feces. Because of this, coliform bacteria, which are easily detectable and commonly found in feces, are used as an indicator of potential contamination by disease causing organisms. As long as potential contamination by disease causing organisms persists, drinking water can produce illness. For this reason, the prevention of contamination and the resolution of any cause of contamination are high public health priorities.

Contamination exceeded the water quality standard for coliform bacteria in 540 Group A public water systems during 1996. For 60 of these systems, the contamination posed an acute or immediate risk to human health. These 540 public water systems served a total of 698,259 people. An additional 1,011 public water systems with minor microbial contamination served 2,450,197 people. In all, 3,148,456 people were potentially exposed to the microbial contamination of 1,561 Group A public water systems. *Nitrates:* Nitrates are organic chemicals that can cause health effects when consumed in sufficient amounts. High levels of nitrate in drinking water can lead to a blood disorder frequently referred to as "blue baby syndrome," or methemoglobinemia. This disease, which interferes with the ability of the blood to transport vital oxygen to the organ systems principally affects infants. Nitrate enters water systems through contamination of the system's water source by fertilizers, decomposing vegetation, or natural geologic formations. Other hazardous contaminants often accompany the nitrates.

A total of 114 public water systems in Washington have been identified with nitrates exceeding the maximum levels allowed by water quality standards. Most of these water systems are very small. The emergence of high nitrate levels in these water systems indicates potential contamination problems in the

source aquifer. While the majority of these systems are located in eastern Washington, they can be found throughout the state. Efforts are underway to reduce the potential sources of nitrate contamination throughout the state. Public education and the provision of temporary water supplies are being used as interim protective measures

Lead: Lead can adversely affect the mental development of young children. Under certain water conditions, lead may leach into the water when it is present in plumbing fixtures or pipe solder used in homes and other buildings. The amount of lead leached into the water is usually very low and not a critical problem by itself, but it can be a significant contributor when other routes of lead exposure are also present.

154 public water systems, serving 36% of the state's residents, or 1,963,741 people, exceeded the health advisory level established by the Environmental Protection Agency (EPA) through 1996. These water systems are in the process of lowering the amount of lead reaching the consumer from home plumbing by controlling the acidity of the water supplied to the homes. Teaching people how to protect themselves from lead exposure is being used as an interim protective measure while more comprehensive corrective measures are installed.

Organic Chemicals: About 780 public water systems in Washington have found a variety of industrial and household chemicals, mostly solvents and degreasers, in their sources. Some of these chemicals produce damage to the human liver, nervous system

and circulatory system. These chemical contaminants, when found are usually detected in low concentrations, however 30 Group A systems have principal sources that were contaminated at or near the level of health concern. Analyzing drinking water for volatile organic chemicals is a recent Department of Health (DOH) initiative, and the historical trend is not yet clear. Several years of sample collection will be necessary to determine if contamination is an ongoing or increasing health problem.

Like volatile organics, DOH has recently begun routinely investigating drinking water sources for a variety of synthetic organic chemicals, mostly pesticides. Statewide, contamination has been detected in sources utilized by 65 systems. Seventeen of these systems operated a principal source where contamination was at or near the health advisory level. Areas are being identified where detection rates are elevated and are considered a priority for further investigation.

Each year many new substances that can potentially contaminate drinking water are developed for household and industrial use. While surveillance for contaminants continues among public drinking water supplies, not enough is known to evaluate these new potentially hazardous contaminants. Because of this, the best way to protect health is to resolve the underlying problems that contribute to possible contamination.

Surface Water: Most water systems in Washington use groundwater as their source of supply. However,

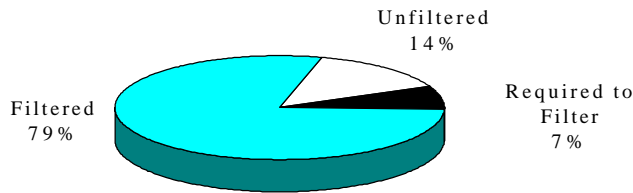
333 public water systems, supplying 2.3 million people serve surface water from sources such as rivers, lakes and streams. All of these sources are above ground with their watersheds exposed and vulnerable to contamination. Contaminants present in the watersheds, including human and animal wastes, pollution, and storm run-off, can be directly introduced into the surface water. Protecting the watershed can reduce the potential of water contamination. For this reason, all public water systems using surface water sources are currently improving the protection of their watersheds.

Surface water sources are particularly susceptible to contamination by disease causing organisms. Disinfection with chemicals such as chlorine is effective for most organisms, but a few, such as cryptosporidium and giardia, are resistant to disinfection. Surface water systems often filter the water to remove these organisms, but filtration is not completely effective. Most water systems in Washington either currently filter or are installing filtration.

Three public water systems, which maintain water quality meeting strict DOH and EPA criteria continue to use unfiltered surface water. These systems serve a total of 322,300 people. Sixty five (65) other public water systems serving 162,844 people have been required to filter, but have yet to complete the installation. The use of surface water, without filtration, can increase the likelihood of exposing individuals to hazardous contaminants.

Overview

Population Served by Surface Systems



Solutions: Most drinking water contamination in Washington results from faulty operations in system facilities, unprotected or vulnerable water sources, and inadequate cross-connection control. Despite ongoing

prevention efforts, contaminants continue to be found in water supplies. When this happens, prompt and appropriate actions such as source treatment and public education, are necessary to protect the health of those drinking

the water.

Each public water system is responsible for preventing health risks related to water contamination. However, community cooperation is necessary to develop the capacity for identifying and avoiding potential problems. A major part of this is providing individuals with information about their water supply, particularly contaminants and potential health risks. This information empowers people to make informed decisions related to improving their own health protection.

Drinking Water Protection as part of the Public Health Improvement Plan

The Public Health Improvement Plan (PHIP) represents a significant change in public health effort. The plan describes the development of an appropriately funded infrastructure at the state and local level. Performance, or effectiveness at resolving problems, will be the basis of accountability.

In 1993, the legislature directed DOH to develop a “blueprint” for statewide public health protection. This led to publication in 1994 of the first “Public Health Improvement Plan,” which will be revised/updated annually by DOH.

The ultimate goal of PHIP is to improve and protect the health of Washington’s citizens. Local communities initiated this effort while seeking stable public health funding and the means to address unresolved public health problems. Through the support and cooperation of broad based representation from business, labor, the Legislature, tribal government, public health professionals, consumers, local and state agencies, and health care providers, PHIP was developed.

Capacity Standards - Similar to various reviews of the state

Drinking Water Program, PHIP also prominently identifies the development of the appropriate public health infrastructure as one of the more critical public health needs. Infrastructure is defined as the basic capacity to provide services at the state and local level for an adequate public health system. To evaluate this, a set of “capacity standards” has been developed to describe the minimum public health programs, and to specify a level of performance that must be met if the health status of the state’s population is to be improved. This must include the capacity to identify problems, to develop effective interventions, and to reach defined outcomes. This dynamic ‘capacity’ provides for an effective response to the ever evolving public health challenges.

Community Based Health - In addition to the establishment of adequate infrastructure, PHIP is founded on the need for local communities to provide the basic services for public health protection. The greatest potential for addressing these public health issues is through effective health protection efforts. For the Division of Drinking Water, the Public Health Improvement Plan heralds a reemphasis on public health protection through the prevention of significant health risks. Many of these efforts focus on identifying susceptible or exposed groups at risk and implementing policies that will result in better protection of more people. It is this focus on groups, or a “population based” approach to health protection, that

gives public health its community orientation and effectiveness. The diverse communities throughout Washington State frequently have differing public health problems. As a result, each local health jurisdiction is expected to conduct a community-wide assessment to evaluate local health needs. In this fashion, local health jurisdictions, in cooperation with the local community, can select and implement strategies that will best reduce the problems.

Funding - In the most recent estimate, the combined annual public health expenditures of \$330 million by the Department of Health and local health jurisdictions fall short by approximately \$104 million (in 1994 dollars) for the statewide public health system to meet the base capacity standards. This shortfall in public health financial

resources is further complicated since the sources of the funding frequently attached include categorical use requirements. Categorical funds, those dedicated for a specific program use or to solve a specific problem are usually neither flexible or stable. Due to their inflexible nature, the use of these resources is frequently inefficient and ineffective. The Public Health Improvement Plan paralleling other reviews specifically focused on the Drinking Water program, highlighted the need for dedicated funding sources to efficiently and equitably distribute public health funds and recommends accountability based upon attaining capacity standards, not by categorical spending restrictions.

Outcome Standards - In 1994, the Public Health Improvement Plan

identified 39 key public health problems. Among those problems was the access to safe and reliable drinking water. In an effort to improve the health status of people living in Washington State several long term objectives or outcome standards were recommended for each problem.

The selected outcome standards represent a sample of major issues in drinking water where there is data availability. Due to the limitations of PHIP, many important public health protection issues were not developed as standards. The outcome standards developed can only be considered as a first step toward the intended goal of improving public health. Except where noted, these standards are generally long-term objectives for the year 2000.

Public Health Improvement Plan

Drinking Water Outcome Standards

Standard	1996 Status	Goal
Report of pathogenic or chemical waterborne disease outbreaks	None in 1996	No more than 1/yr.
Group A PWSs evaluated as adequately meeting operating permit requirements	56% ¹	95%
Group A PWSs in compliance with primary monitoring requirements	Not available	95%
Group A PWSs out of compliance with Maximum Contaminant Level(s) (MCLs)	15%	Less than 5%
Group A PWSs with a certified operator(s)	21% ²	100%
Critical Water Supply Areas (CWSSA) with a current Regional Water Supply Plan (CWSSP)	100%	100% ³
Group A community PWSs with approved Water System Plans (WSP)	13% ⁴	95%
Community Group A PWSs with sanitary surveys conducted annually	17%	100%
Non community Group A PWSs with sanitary surveys conducted every 3 years	Not available	100%
Counties with approved Satellite Management Agency(s)	46%	100%
Local governments implement the adequacy requirements of RCW 19.27.097	50%	100%
Counties with ordinances reducing the proliferation of systems by limiting individual water systems to areas that cannot be served by an existing Group A PWS	None identified	100%
Group A PWSs using ground water sources have delineated & inventoried wellhead protection areas	51%	100%
Group A PWS using surface water sources have watershed control programs established	<10%	100%
Counties with ordinances for the protection of critical aquifer recharge areas	85%	100%

¹ 30% of Group A PWSs were not evaluated for an Operating Permit. Of those systems evaluated, 80% were considered adequate.

² Not all Group A PWSs are required to have certified operators, of those currently required, >99% have certified operators.

³ While 100% have completed the initial plan, the goal is to have current plans in 2010.

⁴ 39% of PWSs required to have a plan currently have an approved WSP

Many of the outcome standards rely on the effort and cooperation of local governments, public water systems, citizens groups, other organizations and individuals. The Division of Drinking Water lacks the regulatory support to achieve many of the goals. For example, not all Group A systems are required to have a certified operator. To require all Group A PWSs to have a certified operator would require a change in statute.

The reduction of small system proliferation by restricting individual

water systems within a Group A PWS service area is under local governance authority. Like the outcome standards, supplying safe and adequate drinking water to the people of Washington, requires the cooperation of a diverse group in addition to the efforts by the Division of Drinking Water.

The Public Health Improvement Plan represents a significant change in public health effort. The plan describes the development of an appropriately funded infrastructure at the state and local

level. Public health problems are to be addressed locally, with preventive and protective methodologies, for a population based solution. Performance, or effectiveness at resolving problems, will be the basis of accountability. As such, the Drinking Water program has developed performance measures to evaluate its effectiveness and environmental indicators to measure public health protection.

Drinking Water Program Implementation Through Planning

Water System Plans promote performance and require more effective long-term management of public water systems with a focus on taking actions to prevent problems. They are an avenue for ensuring ongoing compliance with state, federal and local regulations, demonstrating the need for new or expanded water rights, justifying future rates, and justifying proposed government loans.

In the early 1970's the Department of Health (DOH) created a comprehensive water utility planning program in recognition of planning as a critical management activity of all water utilities. The principal goal of the program is to ensure the efficient use of available resources, and the orderly growth of utilities, while maintaining reliable delivery of high quality water. An essential component of the planning process is the individual water system plan (WSP).

WSPs provide a basis for identifying existing and future system needs and comprehensively addressing those needs. They are an avenue for ensuring ongoing compliance with state, federal and local regulations, demonstrating the need for new or expanded water rights, justifying future rates, and justifying proposed government loans.

The plan is a comprehensive planning document representing a system's attempt to identify, schedule, implement and measure the impact of capital and non-capital (e.g., facilities and activities) system needs for a given time period. The plan must be consistent with local land use plans, such as the comprehensive land use plans being developed under the Growth Management Act. If the system is located within a critical water supply service area, the plan must also be consistent with any regional Coordinated Water System Plan.

WAC 246.290.100 sets forth requirements regarding who must submit a WSP. Included are all public water systems having one thousand or more connections, any public water system experiencing problems, and all new or expanding systems. WSPs must be updated and submitted to the department every six years, and

must cover a twenty year horizon. DOH also requires a plan prior to approving project reports or construction documents, unless the proposed project is needed to correct an existing public health emergency.

WSPs are also used, by the Department of Ecology, when considering a utility's proposal for new or expanded water rights, by the Utilities and Transportation Commission, when considering a regulated utility's proposed rates and by the Public Works Trust Fund, when considering a utility's application for a loan.

Adequate Quantity and Reliability - In order to protect the public's health, the Department of Health must ensure that an adequate quantity of water, both legally and from a resource standpoint, is available to meet ongoing water demands. This is accomplished through the process of approving new public water

Overview

systems or expansions to existing systems.

Adequate water quantity and reliability is necessary to ensure that basic public health needs such as drinking, bathing and toilet flushing can be met on an uninterrupted basis.

Adequate quantity and reliability of source is also

necessary in order to assure that other unsafe (non-potable) water sources are not used in a manner that threatens public health and to ensure that pressure exists in the system to prevent backflow contamination and ensure that fireflow needs are met. A WSP helps public water systems identify present and future needs, while

determining how these needs can be met. Completing the Plan helps ensure that any expansion of the system will not adversely affect the quality or quantity of water provided and that sufficient revenue can be generated to pay for necessary improvements.

Section 2 - Key Issues Facing Washington State

Water Supply Advisory Committee and Drinking Water Program Principles

The Water Supply Advisory Committee spent a year and a half examining the state's approach to drinking water regulation. It determined that the state needs to deliver appropriate services to people in the state in order to ensure safe and reliable supplies of water. State, federal, and local public health jurisdictions, including tribal governments, public water systems (PWSs) and their consumers, share the responsibility for promoting and protecting the health of their communities.

In 1995, the Legislature formally established the Water Supply Advisory Committee (WSAC) (see roster Appendix D) to provide ongoing advice to the Drinking Water Program. It was also given the responsibility to develop, in conjunction with DOH, a report to the Legislature by November, 1996, on the organization, functions, service delivery, and funding of the Program. The Committee was to be comprised of a diverse group of representatives, interested in, and affected by the Drinking Water Program and its activities.

The WSAC convened in the fall of 1995. Three subcommittees were created: Governance and Funding, Program Services, and Water Supply and Planning. Each of the subcommittees was given the charge to identify and discuss issues within these three subject areas, and develop a draft set of principles to be used in making decisions on how the state's approach to water system regulation should be undertaken. These three groups met from January through March, 1996. Each subcommittee produced a report that was discussed by the full WSAC at a two-day retreat at Snoqualmie Summit in early May. Out of the summit meeting came a draft set of principles to be used to evaluate programmatic options in addressing needs that had been identified by the subcommittees.

These principles, once finalized by the Committee, provided the philosophical and analytical framework for the Committee's subsequent work. Underlying the principles was this basic mission statement for the state's approach to the regulation of water systems:

"The state of Washington needs to deliver appropriate services to people in the state in order to ensure safe and reliable supplies of water. State, federal, and local public health jurisdictions, including tribal governments, public water systems (PWSs) and their consumers, share the responsibility for promoting and protecting the health of their communities."

The WSAC principles provided a guide to how a comprehensive state drinking water program should function. The substantive areas addressed were:

- ✧ Public Health Protection
- ✧ Functions of the Department of Health and Local Jurisdictions
- ✧ Governance and Delegation
- ✧ Program Funding
- ✧ Water System Funding
- ✧ Data Management/Sharing
- ✧ Technical Investigations
- ✧ Compliance
- ✧ Planning
- ✧ Public Education and Training
- ✧ Training and Smaller Water Systems

A complete set of adopted principles is in Appendix C of this report.

Utilizing these principles, the Committee evaluated drinking water needs and priorities, identified key differences between how the state's program currently assures the safety and reliability of drinking water, and described how the Committee believed such services should be delivered in the future. Based on this analysis, the Committee recommended the following actions in the coming biennium:

- Full implementation of the revised Safe Drinking Water Act, including access to funding for water systems through the State Revolving Fund
- Delegation and sharing of responsibility, with accompanying funding, between the state and local health jurisdictions, based on voluntary negotiated agreements
- Improving the drinking water data system to produce accurate, timely, and more accessible information
- Increasing the availability of appropriate training and technical assistance for water system operators from the program and from third parties

Key Issues Facing Washington State

- Increasing the number of routine field visits and other technical investigations for water systems
- Developing a more comprehensive and accurate monitoring program for water system sources of supply

The WSAC recognized that additional staff and funds would be required to implement its key findings and recommendations. Accordingly, the Committee recommended a balanced funding strategy that equitably distributed

costs among those receiving services, and provided positive incentives. That strategy included the following additional biennial revenue:

Federal PWSS Grant	\$1.5 million
State Revolving Fund	3.8 million
* Restructured Operating Permit fees	2.1 million
Dedicated portion of the Utility Tax	2.9 million
Model Toxics Control Act (MTCA)	0.79 million

* Support for these restructured fees was contingent on dedication of a portion of the Utility Tax

The WSAC will continue its work during 1997. It has already identified issues that it intends to address, or that it has requested that the

Legislature address, such as the linkage between the Growth Management Act and the provision of reliable water supplies to meet growth

needs. It will also continue to supply ongoing advice to the Program on all aspects of service delivery, and other issues that develop.

Water Quality and Public Health Risk

The Department has evaluated each public water system as to the overall risk to the health of the system's water consumer. The proposed categories for establishing risk exposure are 1) Known risk, 2) Potential risk, 3) Undetermined risk and 4) Minimal risk. Over half of the state's population is receiving safe, "minimal risk" supplies, but 20% of the state's population is receiving water from systems that have known risks in either their sources or their operations.

Most water systems can effectively reduce the health risks related to drinking the water. Source protection, proper system design, effective treatment, operator training, cross-connection control, and monitoring water quality are a few examples of the public health protection efforts by water systems. These efforts have effectively reduced the risks related to contamination, which range from acute gastroenteritis to invasive cancers. The effectiveness of a water system in providing a safe and adequate supply of drinking water is directly related to the water consumer's health risk.

The Department has evaluated each public water system as to the overall risk to the health of the system's water consumer. From the evaluation, the portion of the state's population exposed to that risk was determined. Four major categories, or risk groups, have been proposed for evaluating the health risk associated with water systems. The criteria for each category are based upon

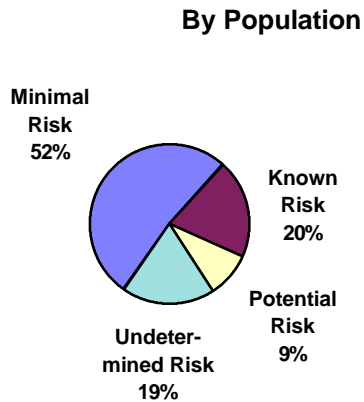
indicators with well described illness or disease outcomes. The indicators were previously developed by Washington's Department of Health and the U.S. Environmental Protection Agency for assessing health protection. DOH evaluated each water system according to the criteria and rated at the category of greatest health impact for which a

Known Risk - Water system's consumers are exposed to health risks from known contamination or known sources of contamination by the water system.

Potential Risk - Water system demonstrates a susceptibility to factors that increase the health risk or the system's protection of the public's health may not be appropriate.

Undetermined Risk - Insufficient information is available to completely evaluate the water system's operation in relation to known or potential risks. Approximately 17% of the state's population do not receive their drinking water from a public supply. These systems are composed of only a single residence or less than four residences on a single farm. There is no information available to evaluate these systems.

Minimal Risk - Based upon adequate information, an evaluation of the water system revealed no known or potential risks. This category does not connote the absence of risk. It is best to consider minimal risk as the standard or normal risk for drinking water consumers in Washington.



criteria was met. The categories; Known Risk, Potential Risk, Undetermined Risk and Minimal Risk are arranged in order of decreasing public health impact.

Category	Number of Systems	Population
Known Risk	1,455	1,090,206
Potential Risk	938	497,198
Minimal Risk	2,007	2,905,616
Undetermined Risk - Public Water Systems	11,258	94,763
Undetermined Risk - Not using a Public Supply	N/A	929,017

A total of 29% of the state's population are exposed to known risk, or potential

risk, through their drinking water. Commonly, systems with known

risks are identified with multiple indicators. All sizes of public water

Key Issues Facing Washington State

systems are included in the known risk category, for example 205 Group B systems have known risks. However, for 19% of the population and 72% of the systems, the lack of information prevented an evaluation. For these systems, risk could not be excluded and is truly unknown.

These risk categories summarize public health protection by water systems based upon the set of previously established indicators. The grouping of the indicators into the risk categories is based on public health similarity.

The contributing indicators are robust, resilient and with well defined public health outcomes. However, some indicators are more persistent with information collected only every few years.

Category	Indicator(s) for Criteria
Known Risk	<ul style="list-style-type: none"> Health Standard Violation (MCL exceedance, Treatment Technique violation) Inadequate treatment installed - Unfiltered surface source required to filter Inadequate source protection - High susceptibility rating on a GW source with no action taken to address risk Ninetieth percentile lead level greater than twice the Action Level Incapable of safe operation - Operating Permit evaluation with Red Permit issued
Potential Risk	<ul style="list-style-type: none"> Contaminant detection (above the MCLG or trigger level) at level less than the health standard At risk source and protection plan in place -High susceptibility on a GW source with action taken to address risk¹ Source in potential need for treatment - Potential GWUDI Source Ninetieth percentile lead level greater than the Action Level Water system with appropriate compliment of properly trained operators² Capable of safe operation, yet failed to completely operate in that fashion - Operating Permit evaluation with Yellow Permit issued Inadequate Cross-connection program² Sanitary defects identified²
Undetermined Risk	<p>Sufficient information is not available to complete an evaluation</p> <ul style="list-style-type: none"> Group B PWSs Consumers acquiring water from other than a public water system Failure to Monitor²
Minimal Risk	<p>Sufficient information is available to complete the evaluation and no significant or potential risks were identified</p>

¹ Water System Plan (WSP) after 6/95

² Data not available at the time of the analysis

The public health indicators provide a valuable description of the impact of water systems on the public's health. Each indicator represents a

different health risk. By combining the indicators into the risk categories, the potential impact of drinking water on the public's

health can be evaluated. The development of the public health indicators, makes possible the assessment of the overall health risk from drinking water for Washington's residents and visitors.

Source Protection To Prevent Contamination of Supplies

Preventing contamination of sources is the most effective way to protect the health of water system consumers. By focusing primarily on large, easily polluted water systems, DOH can help prevent contamination incidents from impacting the most number of people.

A cornerstone in providing safe and reliable drinking water is protecting current and future supplies of drinking water. Preventing contamination is significantly more cost effective and more protective of public health relative to remediation (clean-up) once contamination has occurred. Washington State has mandatory source water protection programs for both surface water and ground water systems. For surface water systems, the program is the Watershed Control Program. For ground water systems, the program is the Wellhead Protection Program.

Implementation Strategy

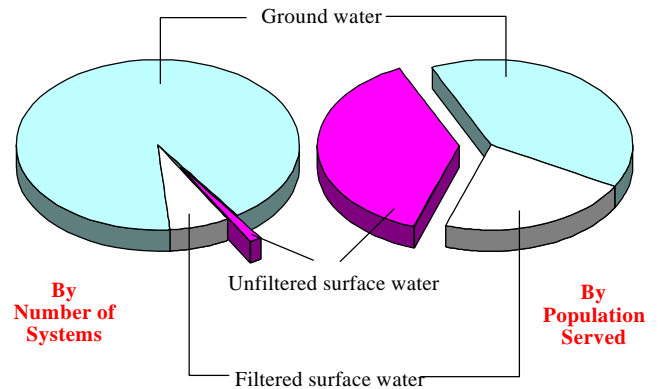
Currently DOH is working with water system purveyors, local governments and other agencies to implement effective source water protection measures for drinking water supplies. The existing source water protection programs for water systems are relatively new and the state is still in the initial steps of the implementation process. One particular challenge as source water protection efforts continue is to encourage local jurisdictions to work with the water systems to evaluate existing land uses and practices to ensure all appropriate risk reducing and pollution prevention measures are used by the potential contaminant sources located near drinking water supplies.

There is not one single correct source water protection measure. Each water supply may have different susceptibilities to contamination with different types of potential contaminant sources located nearby. The approach

DOH has adopted is to require water system purveyors to ask themselves a series of questions (i.e. Where in the environment now is my future drinking water? What contamination risks are nearby? How easily can pollution get to the drinking water supply? How much would it cost to replace if polluted?) to better define how vulnerable their drinking water supplies are to contamination as well as what the potential costs might be if contamination should occur. They are then required to share their findings with key decision makers at the local, state and federal levels, as well as with the owners/operators of any potential contaminant source sited near the drinking water supply.

DOH's initial implementation efforts linked applying for a monitoring reduction waiver with source water protection. Water systems had to delineate their wellhead protection area or watershed control area, inventory for contaminant sources, and assess the susceptibility of their water supply to contamination, in order to be considered eligible for a monitoring waiver. This was very effective in getting the majority of community water systems to initiate source water protection measures. It did not provide any incentives for non-community systems to comply.

Based on the large number of water systems, combined with the



differences inherent in water systems serving varying numbers of people across very different hydrogeologic and social settings, DOH's near-term implementation strategy has two primary elements. The first is review of water system plans. DOH reviews the water system plans for the larger water systems in the state as well as water systems located in critical water supply service areas. These plans are typically reviewed on a 6 year cycle. As a water system plan is reviewed, compliance with source water protection requirements is confirmed.

The second element in DOH's strategy is to focus attention where the most progress can be made and the most protection provided. This is to be accomplished by prioritizing water systems based both on susceptibility to contamination as well as population at risk. In other words, by focusing primarily on large, easily polluted water systems, DOH can help prevent contamination incidents from impacting the most number of people.

Small Water Systems and Adequate Operation

Small water systems frequently have problems operating adequately because of their size. The Drinking Water Program is charged with establishing a program that assures that if a new system is created, it has the technical, managerial and financial capability to remain in compliance with all pertinent regulations.

In 1996, 580 new water systems were created, raising the total number of systems in Washington to 15,658. 15,318 of these systems are defined as “small” systems, serving between 2 and 99 service connections. For several years the number of small water systems, and the problems associated with them, have been increasing.

DOH, over time, has recognized some of the problems associated with the small systems. These problems are evident in all facets of system operation including:

Ownership and Management-

The identity of the owner, and the accompanying responsibility of ownership and management, of a system are sometimes in question.

Financial - Inexperience in budgeting and financial planning can create problems for systems. A lack of customer base (economies of scale) can also result in high user rates.

Engineering - Small systems have historically been under designed to serve growth. Small scale cost effective treatment facilities for small systems are lacking.

Operation and Maintenance - Small water systems’ personnel often lack the knowledge to successfully operate the system. Many operators are volunteers and may not be available to the job on a regular or emergency basis.

Regulatory and Institutional - Many small systems find it difficult to remain in compliance with all of the regulatory requirements. DOH recognizes that it uses a substantial amount of

its limited resources addressing compliance problems of small systems.

Small Water System Adequacy Workplan.

To address all of the preceding problems associated with small systems, DOH has periodically convened, several workgroups to study some of the problems and propose potential solutions. In 1990, DOH formed a small water system task force which published a “Small Water System Task Force Solutions” document. The group assessed problems and proposed an action plan to address these problems. As part of a continuing effort to regulate and educate involved parties about water system management, DOH is currently working on the following program elements:

Proliferation - Based on some of the issues identified by the Small Water System Task Force as well as other areas of interest in the political arena, the 1995 Legislature passed E2SSB 5448. The bill places restrictions on the formation of new public water systems. Recognizing that many problems could be prevented if the systems were developed by qualified service providers, the law requires that all new public water systems must be owned or operated by approved Satellite Management Agencies (SMA), if one is available. If an SMA is not available, the agency approving systems is to place conditions on new systems to add a further level of protection for the system users.

Viability - While it is important to understand the rate of growth of new systems, the most important charge for DOH is to establish a program that assures that if a new system is created, it has the technical, managerial and financial capability to remain in compliance with all pertinent regulations.

Washington state is considered one of the leaders in the nation on its viability program. Following the intent of the reauthorized Safe Drinking Water Act (SDWA), DOH intends to expand the scope of its viability program. DOH is nearing completion of a Water System Plan handbook for existing nonexpanding systems that, when completed by the system, will enable them to build their viability. New system capacity requirements of the SDWA will incorporate DOH’s existing viability program.

Education and Training - DOH recognizes that the complexity of owning and operating a water system is increasing and that continuing education and training is necessary. Changes in the SDWA require that system operators and managers keep up to date in several areas in order to develop and maintain the technical, managerial and financial capability to remain in compliance. DOH is in the process of creating programs that will educate and train systems in how to gain these capabilities.

Small System Workgroup - DOH is planning to reinstate a small water system workgroup in the Spring of 1997 as a followup to existing efforts. A work plan is also being developed concerning

how DOH should address proliferation, viability, and training and education needs of small water system

owners/managers/users. Similar to the workgroups in the past, this workgroup will consist of local government representatives, water

purveyors, legislative representatives, outside technical assistance providers, and other interested parties and DOH staff.

Growth Management Act and Water System Services

Growth Management Act invalidation decisions have affected DOH review of pending water supply applications in several counties. The new invalidation authority has had a dramatic impact on land development with a direct effect on the ability to develop and expand public water systems.

In 1990, the legislature passed the Growth Management Act (GMA), which requires most local governments to develop local land use plans, policies, and development regulations, aimed at accomplishing a variety of statewide goals. These goals focus on maintaining our quality of life while accommodating an anticipated two million plus population growth over the next two decades. The GMA included provisions authorizing interested parties to appeal locally-adopted GMA provisions to one of three regional Growth Management Hearings Boards (GMHB). If a GMHB ruled against the city or county action, it could order that city or county to revise the resulting document to be consistent with GMA. Until the document was revised, it remained in effect, even though it did not comply with GMA.

In 1995, based on the recommendations of the Regulatory Reform Task Force, the legislature gave each GMHB the authority to invalidate GMA documents, either partially or totally, if a GMHB found that continued use of the documents “would substantially interfere with the fulfillment of the goals” of GMA. The new invalidation authority has had a dramatic impact on land development with a direct effect on the ability to develop and expand public water systems.

When a GMHB invalidation order occurs, new land use applications (such as building permits or subdivision approvals) that would have been governed by the invalidated document become “vested” against the future GMA document that will ultimately be approved by the GMHB. Since no one can be sure of what that future document will allow or require, in the way of land use (such as zoning densities) approval of the applications by a local government becomes a risky proposition. Who’s liable for damages if a subdivision is approved, the lots are sold, and, later, the subdivision is nullified because it doesn’t comply with the future land use plan? This is not just a hypothetical question. The King County Superior Court (Association of Rural Residents vs Kitsap County) recently ordered Kitsap County to void its approval of a planned unit development due to its noncompliance with GMA.

The State has developed four general criteria that identify those land use applications, requiring some state approval, that state agencies can process consistent with the GMA. At least one of these criteria must be met.

They are:

1) Does the application concern lots that have vested under RCW

58.17.033 or RCW 19.27.095 prior to October 6, 1995? If so, agencies may proceed with processing the application.

2) Does the application concern property located wholly within an existing city or town boundary? If so, agencies may proceed with processing the application.

3) Does state approval of the application under consideration include a determination of adherence to or consistency with the county’s GMA-mandated comprehensive plan and development regulations? If no, agencies may proceed with processing the application.

4) Even assuming there are or may be restrictions on state approval, does the application concern urban governmental services as defined in RCW 36.70A.030(16), and is the project:

a) necessary to protect basic public health and safety and the environment;

b) financially supportable at rural densities; and

c) incapable of promoting urban densities? If so, the agency may proceed with processing the application.

When an invalidation occurs, the Department of Community, Trade and Economic Development (CTED) notifies the local elected officials of the state criteria for their county.

Key Issues Facing Washington State

DOH follows up with letters to the local elected officials, local health jurisdiction and Group A public water systems, which elaborate on the state criteria and provide more detail on evaluating water system plans and water supply projects.

During 1996, GMA invalidation decisions affected DOH review of pending water supply applications in Clark, Kitsap, Mason, Island, Whatcom, Skagit and Chelan Counties. Approximately two-thirds of proposed water supply projects and about one-third of water system plans meet the state criteria and may

be processed by DOH. Cities tend to be least affected by the invalidations. Regional rural service providers are the most affected. Applications that cannot be processed must either be modified to comply with the criteria or wait for the county to come into compliance with GMA. Returning to compliance can be a very lengthy process. These GMA provisions have created a significant challenge to DOH, local governments, and water purveyors. Coupled with the ongoing inability of larger water systems to obtain new or expanded water rights needed to accommodate

anticipated growth, this is encouraging rural development on less reliable, very small public and individual water supplies which utilize wells which are exempt from water right permitting requirements.

Water utilities need to (1) encourage their local governments to fully comply with the provisions of the GMA, and (2) submit their water system plans and projects to DOH for review at an early date so that they can be processed before a GMHB invalidation occurs.

Section 3 - The Changing Regulatory Environment

Safe Drinking Water Act Amendments of 1996

Revisions to the SDWA will allow Washington to tailor its requirements to state circumstances, focus on highest health priorities, and reduce the burdens on the numerous small water systems in the state.

The federal Safe Drinking Water Act (SDWA) was reauthorized by Congress in August, 1996 updating the original SDWA of 1974 and its 1986 amendments. The 1996 Amendments make extensive changes to some of the current requirements that the Environmental Protection Agency (EPA), states, and water systems have been trying to implement and/or comply with for the past 10 years. They were developed with unprecedented contributions from water utilities, organizations and state and local officials embodying a partnership approach that includes funding for states to assist water systems, particularly the smaller utilities, to comply with the SDWA.

The 1996 Amendments provide states with options, incentives and funding for several of the new mandated activities. Required activities include statewide source protection, system capacity, and operator certification programs. Optional and desirable program activities include the State Revolving Fund (SRF) program and increased monitoring waivers for water systems. Some of the major provisions of the amendments include standard setting, health research, consumer awareness and public notification, small system technologies, enforcement, and a number of specific drinking water standards/regulations. Nonetheless, the 1996 Amendments still represent significant challenges and impacts to EPA, states and all federally

regulated (Group A) public water systems. The following are key areas that DOH expects to focus on in Washington.

Source Water Assessment/Greater Monitoring Flexibility - DOH has already elected to pursue the waiver approach with water systems and provide greater monitoring flexibility where there is no increased risk to public health. DOH and water systems will be able to focus resources on the most pressing water quality needs. Our ability to do this will first require a comprehensive statewide source water assessment.

Capacity Development - The new capacity development provisions require adequate technical, financial, and managerial resources from water systems. This has been promoted and, to some degree, already required under the DOH's water system planning and financial viability programs. There are no significant changes anticipated to what is already being done, other than expansion.

Operator Certification - During 1995, the Washington State Legislature enacted an agency request bill (E2SSB 5448) that brought more systems under state operator certification requirements. The new federal laws, requiring EPA to work with states and their existing programs, should allow a transition time to minimize the impact to Group A systems currently not required to have certified operators. The SDWA also provides an opportunity for

reimbursement of certain training and certification costs for small system operators via pass-through grants to states.

Consumer Information - DOH has always encouraged customers to obtain water quality information directly from their water systems and has provided water quality data when readily available. The new requirement for annual consumer reports puts water systems in a proactive role, which a number of water systems have already assumed.

Water System Funding - DOH intends to take full advantage of federal funds offered to states to provide financial assistance under the State Revolving Fund (SRF) Program. DOH staff have been assisting EPA in developing implementation at the federal level, and have begun coordination efforts with the Public Works Board for Washington's program. However, some of the federal funds require state match.

Surface Water Treatment Rule (SWTR) Exception - A few of our state's utilities using surface water are going to benefit from the new exception to the filtration requirement. The new amendments allow states, on a case-by-case basis, to set treatment techniques as an alternative to filtration (as required under the SWTR) for systems with controlled watersheds, if the alternative ensures greater public health protection than filtration and disinfection.

1986 Drinking Water Standards Contaminants Required to be Regulated Under SDWA of 1986

Volatile Organic Chemicals	Inorganics	Alachlor
Carbon tetrachloride	Aluminum	Aldicarb
Chlorobenzene	Antimony	Atrazine
Dichlorobenzene	Arsenic	Benzopyrene
Dichloromethane	Asbestos	Carbofuran
1,2-Dichlorethane	Barium	Methoxychlor
1,1-Dichloroethylene	Beryllium	Oxymal
cis-1,2-Dichloroethylene	Cadmium	Pentachlorophenol
trans-1,2-Dichloroethylene	Chromium	Phthalates
1,2-Dichloropropane	Copper	Pichloram
Ethylbenzene	Cyanide	Polychlorinated biphenyls(PCBs Polynuclear aromatic-hydrocarbons (PAH)
Methylene chloride	Fluoride	Simazine
Styrene	Mercury Molybdenum	2,3,7,8-Tetrachlorodibenzodioxin
Tetrachloroethylene	Nickel	Toxaphene
Toluene	Nitrate	2,4,5-TP (Silvex)
Trichlorobenzene	Nitrite	Vydate
1,1,1-Trichloroethane	Selenium	Radionuclides
1,1,2-Trichloroethane	Silver	Beta particle & photo radioactivity
Trichloroethylene	Sodium	Gross alpha particle activity
Vinyl chloride	Sulfate	Radium-226 and radium-228
Microbiology and Turbidity	Thallium	Radon
<i>Giardia lamblia</i>	Vanadium	Uranium
<i>Legionella</i>	Zinc	
Standard plate count	Organics	
Total coliforms	Acrylamide	
Turbidity	Adipates	
Viruses		

Regulatory Reform and Drinking Water Program Activities

The Governor's Regulatory Reform Task Force and various legislative committees have imposed on state regulatory agencies new directives which include new criteria in the adoption of rules and an emphasis on technical assistance and voluntary compliance rather than formal enforcement and imposition of penalties.

For the past three years, considerable attention has been focused on the issue of the regulatory burden imposed by federal and state agencies on the people and businesses being regulated. At the Environmental Protection Agency (EPA), a number of measures have been initiated to develop partnerships with state governments and regulated entities across all areas of federal environmental regulation, including those affecting public water systems. In Washington, the Governor's Regulatory Reform Task Force and various legislative committees have collectively imposed on state regulatory agencies new directives generally referred to as "regulatory reform." These include new criteria in the adoption of rules and an emphasis on technical assistance and voluntary compliance rather than formal enforcement and imposition of penalties.

Within the Environmental Health Programs at DOH, which includes the Drinking Water Program, this new way of doing business has been institutionalized with the creation of the regulatory reform unit. That group is responsible for ensuring that the general directives from the Governor's office and the Legislature are being carried out,

consistent with both the spirit and intent of such directives.

At the Drinking Water Program, initiatives to implement regulatory reform in 1995 were continued and, in some cases, expanded. These included:

- Development of draft rule language for the revision to the Waterworks Standards, which will adopt performance-based approaches to water system designs, and in many cases reduce or eliminate detailed review by DOH staff
- Expanding and updating a technical assistance inventory, available to the public, that identifies such resources available both at DOH and elsewhere
- Allocating additional staff time to developing additional training and technical assistance for water system owners and operators, with a focus on small systems
- Developing and updating agreements with local health jurisdictions to clarify roles and eliminating overlapping areas of responsibility
- Placing more staff routinely in the field for visits to water systems
- Involving the regulated community and other stakeholders in a full evaluation of drinking water protection as part of the Water Supply Advisory Committee

In addition, the Program undertook the following efforts in 1996:

- Repealed one outdated rule through the new "expedited repeal" process
- Began providing notification to the Code Reviser, for publication in the State Register, of all formal policy statements adopted by the Program
- Developed and began implementing a full set of "performance measures" intended to allow evaluation of the Program's effectiveness and efficiency
- Adopted an "alternative review" process that essentially allows self-evaluation by certain water systems of distribution-related projects
- Entered into an agreement with the Department of Ecology that will allow development of cooperative and voluntary compliance plans by communities faced with multiple violations of environmental regulations
- Adopted a set of "environmental indicators" relative to water system performance that allows operators, consumers, and public health professionals to know the status of a given system relative to the public health risk associated with inadequate operation.

Water Conservation and Water Supply Planning

Efficient water use and accurate water demand forecasting are important components of overall water system management. As new sources of water become more difficult to develop, conservation and efficiency improvements to existing developed sources will become increasingly important.

The Department of Health (DOH) is the lead agency for developing water conservation, water demand forecasting, and water use data collection and reporting guidelines and requirements for public water systems in Washington State. These elements are all addressed as part of a water conservation plan. DOH reviews the conservation plan as part of the water system plan (see page 15) submitted by water purveyors. DOH works in cooperation with the Department of Ecology (Ecology), other state agencies, water purveyors and other interested parties in developing the necessary policies and requirements for such water conservation planning.

DOH and Ecology have developed a Memorandum of Understanding detailing agency coordination on these programs. As part of this agreement, the water conservation program, water demand forecasts and water use data collection guidelines and requirements administered by DOH also meet the regulatory requirements of Ecology for the purposes of water right processing and administration. DOH and Ecology requirements for development of a water conservation plan are contained in the "Guidelines and Requirements for Public Water Systems Regarding Water Use Reporting, Demand Forecasting Methodology, and Conservation Programs" (Conservation Planning Requirements) published in March 1994. This document was developed based upon DOH

authorities contained in RCW 43.20.230 and WAC 246-290-100. Other authorities also exist in various other Ecology statutes. Adequate water quantity and reliability is necessary to ensure that basic public health needs can be met on an uninterrupted basis and is necessary to assure that other unsafe (non-potable) water sources are not used in a manner that threatens public health. As water becomes more scarce and difficult to obtain, and competing demands for water increase, the same finite resource is going to have to go farther in order to meet the states continued population growth, expanding economy and natural resource (e.g. instream flows for fisheries) needs.

Water conservation programs developed by purveyors help to increase the water use efficiency of water systems, and helps to allow for continued growth and expansion while minimizing impacts to our natural resources. The Seattle Water Department alone has saved 14 million gallons a day since 1990, and forecasts saving an additional 21 million gallons a day by 2005 through implementation of their conservation program. The water demand forecasting conducted by purveyors helps to ensure that future water demands are accurately identified, and that new sources are developed and on line when needed.

Purveyors are required by DOH to begin to plan for new source development when their demand forecasts indicate that additional water rights or source capacity will be needed within 20 years. This

demand forecasting helps to ensure that existing developed sources are not "over connected" such that adequate water quantity is not available to meet system needs. Finally, the water use data collection program provides the "actual use data" necessary to accurately develop water demand forecasts and develop effective water conservation programs.

Purveyors are also strongly encouraged to develop water shortage response plans detailing actions that will be taken during various levels of water shortages. This includes development of a contingency plan that identifies procedures for making emergency water available to customers. Having a water shortage response plan will provide purveyors with an established plan on how to address shortages. It will also assist customers in understanding what they can do to reduce water usage and what to expect if the shortages become more severe. DOH guidelines on developing such water shortage response plans are available upon request.

DOH provides technical assistance and guidance to public water systems regarding compliance with the Conservation Planning Requirements. This includes several technical assistance documents and brochures that can be distributed to system customers. During 1996 DOH undertook the following water conservation activities.

- Amending WAC 246-290 to require development of a water

shortage response plan as part of the water system plan.

- Developing a water use data management database, and initiating the collection and management of such water use data.

- Developing “source of supply” analysis requirement that expand the water conservation program elements that must be considered by systems needing additional water rights. This includes evaluation of artificial

recharge, interties, wastewater reuse, and other innovative conservation/efficiency opportunities.

- Further developing, implementing and promoting the wastewater reuse program, and developing a greywater reuse program.

- Providing ongoing technical assistance and direction to purveyors developing water conservation plans.

Efficient water use and accurate water demand forecasting are important components of overall water system management. They are also important to ensuring a healthy and growing economy, as well as a healthy natural environment. As new sources of water become more difficult to develop, conservation and efficiency improvements to existing developed sources will become increasingly important.

Water Reuse as a Potential New Supply for Washington State

In recent years, limitations on new water sources have created incentives to develop innovative approaches to more efficient use of existing water supplies. The reclaimed water act encourages water conservation through the development of reclaimed water standards, program implementation through pilot projects and establishment of a reuse advisory committee and reclaimed water permits. Fourteen projects have been granted pilot project status. Two of these are completed and in use. When all pilots are completed, almost 9 million gallons of potable water could be saved and used for other purposes.

In recent years, limitations on new water sources have created incentives to develop innovative approaches to more efficient use of existing water supplies. In 1992, the Legislature passed SHB 2833, also known as the “Reclaimed Water Act,” which was later codified in RCW 90.46. This legislation was the starting point for the wastewater reclamation and reuse program in Washington. The intent of the Reclaimed Water Act was to encourage water conservation through the development of reclaimed water standards, program implementation through “pilot projects,” and establishment of a reuse advisory committee and reclaimed water permits.

Reclaimed water uses municipal wastewater as a starting point but provides adequate and reliable treatment to reclaim this water source to a point that by statute definition it is no longer considered wastewater. In short, reclaimed water is highly treated, reliable and

highly regulated to be a safe alternative for uses that do not require drinking water quality.

Reuse interim standards, a pilot project program and the reuse advisory committee work was all completed by DOH and Ecology in 1993-94. Since then DOH and Ecology have continued to work together to refine reuse standards, permit procedures and maintain a pilot project program. Reclaimed water permits are issued jointly by DOH and Ecology to the generator of the reclaimed water who may then distribute the water to approved users under the conditions of the permit. As per the intent of the reclaimed water act, only one permit is issued whenever possible.

The Reclaimed Water Act was amended by the Legislature in May of 1995 under SSB 5606. The 1995 legislation required two new standards to be developed by the agencies, and reactivation of the advisory committee. The two new standards were for reclaimed water

discharges into existing wetland systems and groundwater injection. Completion of this task will place Washington in an innovative position for water resources management. Due to funding issues, the activities of the 1995 legislation were slow to start but should be completed by the middle of 1997.

The reuse of single family greywater (sinks, laundry, shower water) was studied by DOH under the 1992 Reclaimed Water Act. DOH decided to develop greywater reuse guidelines for sub-surface irrigation to provide a broad approach to reuse in Washington. The greywater reuse guidelines are in draft form at this time and should be ready for implementation by the summer of 1997.

Implementation of Reuse Through Pilot Projects - The Legislature intended the pilot project program to provide a stimulus for reuse in Washington. The legislation required a streamlined approach to

The Changing Regulatory Environment

deal with pilot projects and permitting. Initially, pilots were slow to develop because of limited funding options and strict eligibility requirements under grant programs. The 1995 legislation provided some grant funding, and, after development of the interim reuse standards, 14 projects have been granted pilot project status by DOH and Ecology. Pilot projects may have innovative technology or address special needs in implementing reuse. Each pilot project assists DOH and Ecology in developing efficient permitting requirements and tests the applicability of the reuse standards.

Two of the 14 pilot projects are completed and in use. One project uses reclaimed water to irrigate Holmes Harbor Golf Course on Whidbey Island, and the second provides cooling water to the Boeing Training Center in Renton Washington. Two other pilots are under construction at this time and should go into operation in 1997. When all the pilot projects are completed, almost 9 million gallons of potable water could be saved and used for other purposes.

Key Issues

In working with the pilot project process and dealing with existing regulatory requirements for reuse

projects, the following issues have been identified:

Water Rights - Reclaimed water projects under current Ecology policy, must obtain or be covered under an existing water right permit. Place of use issues under existing water permits and potential users of reclaimed water do not always match.

Conservation - Under the current water right policy, regional wastewater facilities do not own the wastewater and must get permission from the original water right holder to reclaim the water.

There are no incentives to require anyone to use reclaimed water even when available. This reduces the marketability of reclaimed water and some of the potential conservation benefits.

Costs - Reclaimed water development costs are high and must compete with other water quality and public health related wastewater projects. Funding to equalize the cost comparable with potable water source development is needed.

Public Perception - Public education and outreach is needed to provide information on perception issues and benefits of reclaimed water.

Program Funding - Funding for agency work on reuse was proposed from permit fees and project review fees. Revenue from these sources is

inadequate (due to long project life cycle) to cover reuse program staff. Current DOH reuse program staff are only funded through July 1997.

Liability - Liability issues for reclaimed water users has not been well defined.

What Needs to be Done?

DOH and Ecology are trying to deal with some of the key issues through advisory groups and with policy changes where necessary. The following issues may need regulatory changes or legislation to fully implement:

- A dedicated funding program for reclaimed water projects is needed to reduce the cost of reclaimed water down to a level equal to or less than potable water.
- Incentives to require the use of reclaimed water when it is available and at equal or lesser cost than potable water.
- Resolving the water right issues with reclaimed water and who has the right to reclaim the water.
- Funding for the reuse program to provide a minimum number of staff to service pilot projects and maintain the reclamation standards.
- Indemnification of reclaimed water users from liability if their use is consistent with health and environmental standards.

Significant Changes to Drinking Water Rules

During 1996 DOH devoted substantial effort to revision to water works standards and other possible regulatory changes. These changes will have a positive impact on public health by promoting improved system management and reliability, and reducing DOH involvement in reviews/approvals with little public health risk.

The Division of Drinking Water, on behalf of the State Board of Health, is currently in the process of amending Chapter 246-290 WAC Public Water Supplies.

Many of the changes being considered have been recommended by the Drinking Water 2000 Task Force, a multi-interest group that was charged with determining how the Drinking Water Program should be structured and funded by the year 2000. The rule changes will have a positive impact on public health by promoting improved system management and reliability. Some changes will actually reduce the burden on the regulated community by eliminating unnecessary costs to water system owners and customers.

Possible changes include:

- ✧ Reducing the water system plan review requirements of professional engineers,
- ✧ Clarifying and adding water conservation and financial viability requirements,
- ✧ Requiring water system plans of all Group A systems,
- ✧ Modifying the process for water system project approval,
- ✧ Amending the water system design standards,
- ✧ Incorporating recent federal Safe Drinking Water Act amendments,
- ✧ Expanding public notification and disclosure requirements,
- ✧ Requiring the preparation of water shortage response plans,

- ✧ Eliminating the requirement for non-expanding systems to prepare small system management plans,

- ✧ Clarifying cross-connection control requirements, and

- ✧ Making several non-substantive grammatical changes.

Amendments to the rule are needed to include recent legislative changes, clarify existing language, ensure consistency, and modify state rules as required to conform to federal rule changes.

The program gathers input on rule revisions through workshops and actively seeks comments and suggestions from interested parties through informational meetings, mailings and correspondence. The adoption of the final rule should occur in the summer of 1997.

Section 4 - Funding

Funding Washington's Drinking Water Program

Several recent reviews of the program have identified major gaps in the program that have at least some origin in the current level and mix of funding for the program. The Water Supply Advisory Committee (WSAC) during 1996 developed recommendations to address these gaps.

The Drinking Water Program carries out activities that implement both state and federal requirements for water systems. Program funding is a mix of federal and state money. For the past ten years or so, the mix of funding sources has changed as new state and federal requirements for water systems have become effective.

The program was once supported principally from state General Fund money and the EPA PWSS grant for implementing the SDWA. The federal grant has, for several years, provided a declining share of the overall program funding, although within the past two years Congress has increased this funding to the states. In 1993, the Legislature eliminated General Fund support, and substituted funding out of the Centennial Clean Water Account, which has remained relatively constant for four years. Fees charged to water systems for their annual operating permits were placed in statute by the Legislature in 1991, and have not been changed since then. The program has been able to significantly increase funding only from fees that may be charged for program services.

The following table shows staffing and revenue trends in the program since 1985, as expressed in the number of full-time equivalent staff ("FTE's") supported by the revenue sources identified.

For 1996, program funding remained relatively unchanged from 1995 levels. Congress did authorize

Year	Gen Fund	Centennial Fund	EPA	REF 38	Toxics	Fees	Op Permits	Total
1985 1	8.25		16.0	16.0		2.25		42.50
FY89	8.5		16.3	15.5	4.5	3.2		48.00
FY92	24.2		18.6	5.0 2	5.5	2.5		55.80
FY93	27.4		22.4	3.0 3	5.5	4.5	9.0	71.80
FY94		20.2	24.3	2.0 4	5.0	10.5	13.0	75.00
FY95		20.2	26.3	2.0	4.5	16.0	13.7	82.70
FY96		21.3	29.9		4.0	14.7	13.9	83.8
1 From Drinking Water Program Evaluation by John Gaston, June 13, 1988								
2 Funded Needs Assessment Project								
3 Funded Needs Assessment and Re-use Projects								
4 Funded Needs Assessment and Conservation Projects								

a 3.6% increase in PWSS grants to states for the 1996 federal fiscal year, which translated into an increase to Washington of \$200,000. The program will receive another PWSS grant increase during 1997. Major state funding sources--Centennial Fund, Operating Permit fees--did not change.

Several recent reviews of the program--the 1994 Drinking Water 2000 Task Force, and this year's Water Supply Advisory Committee--have identified major gaps in the program that have at least some origin in the current level and mix of funding for the program. In particular, the following are some of the major programmatic and funding problems that exist:

Noncompliance - High levels of noncompliance by small systems with regulatory requirements cannot

be pursued, either through enforcement or the provision of technical assistance, because of lack of DOH staff.

Data - Some of the basic infrastructure for the state's program, such as its data system, cannot routinely meet the needs of consumers, system operators, DOH staff, or local health officials.

Delegation - Delegation of some regulatory activities, particularly for small systems, to local health jurisdictions or other third parties cannot be done because of the inability to provide funding.

Primacy - Implementation of required elements of the SDWA has not occurred, or has been delayed, jeopardizing DOH "primacy," and potentially leading to more direct involvement by EPA with water system activities.

Fees - Increased reliance on unstable and unpredictable fees for service has made it difficult for the program to build and sustain activities and approaches that rely on these funding sources (such as the monitoring waiver program).

Unfunded Costs - The lack of increases in the most significant state funding sources--the Centennial fund, and Operating Permit Fees--has required that routine increases in program costs, such as those for inflation or employee salary increases, be absorbed out of other

funding sources that are already inadequate.

Utility Tax - Most water utilities collect a utility tax that is deposited in the state General Fund; until some of that money is directed toward supporting the DOH program, utilities are reluctant to voluntarily accept increased fees to meet the program's funding needs.

In the absence of adequate funding, the program has been forced to prioritize its activities, and direct them toward the highest public health needs. Both the Drinking

Water 2000 Task Force and the Water Supply Advisory Committee have adopted recommendations to meet the funding need. The WSAC recommendations include funding from multiple sources, including use of some federal money made available by Congress in 1996 as part of the SDWA reauthorization, and a dedicated portion of the water system utility tax (See Section 3). DOH expects to carry forward those recommendations to the Legislature in 1997.

Water System Funding/State Revolving Fund

Washington's water systems are faced with approximately \$3 billion in capital needs. With the authorization of the State Revolving Fund (SRF) program by Congress in August, 1996, there will be significant federal funding flowing to water system needs for the first time. DOH is currently in the process of developing an administrative structure for the SRF, jointly with the Public Works Board and Community of Trade and Economic Development (CTED). It is hoped that funds will become available by the fall of 1997. However, there still remain some significant issues and funding needs that should be addressed.

The absence of adequate and accessible funding has long been a problem for the state's water systems, particularly the small ones. The \$75 million in state funding authorized under the 1980 Referendum 38 program, administered by DOH, was virtually exhausted by 1991. At the same time, new federal requirements under the 1986 amendments to the SDWA were imposing increasingly complex and costly requirements on systems as small as 15 connections. A 1992 statewide survey conducted by DOH identified \$2.2 billion in projected water system capital needs, for which \$917 million had no identified funding source. The 1996 EPA national drinking water system needs survey identified nearly \$3 billion in documented needs in Washington by the year 2014. The only major state funding source to meet these needs is

the Public Works Trust Fund (PWTF). The PWTF is able to make available only \$30 million annually for water system needs. It is also limited to funding public entities, and has no grant money available.

With the authorization of the State Revolving Fund (SRF) program by Congress in August, 1996, there will be significant federal funding flowing to water system needs for the first time.

The Water Supply Advisory Committee reviewed the issue of water system funding, and developed the following applicable principles:

1) Significant new state resources should be made available to assist water systems in meeting new capital needs. This includes resources to ensure the prompt availability of the State's share of any federal funding that may become available under the State Revolving Fund or other

programs. If funding through SRF is either inadequate or not available in a timely fashion, a legislative proposal authorizing statewide bonds for identified water system capital needs should be developed and submitted to the people of the state for approval.

2) State funding programs should provide assistance in a manner consistent with DOH objectives for achieving long-term financially responsible and well-managed systems (viability), preventing the proliferation of new nonviable systems, and financing restructuring activities by satellite managers and others.

3) The provision of financial assistance should be linked to efforts to have systems operate in compliance with relevant regulatory

requirements, recognizing that such financial assistance will focus on public health, but may not be adequate to meet all SDWA requirements.

4) A state or local mechanism should be developed to provide a source of capital funding for water systems in those counties that have accepted delegation of program functions from DOH, in order to facilitate development of local solutions to water system problems. It should be based on the local jurisdiction's evaluation of system needs.

5) The State should promote passage of a federally-funded program to assist water systems. Development of the financial assistance program for water systems should be shared with EPA, and assistance conditioned upon a system's meeting financial viability requirements.

6) If SRF or statewide bond funds become available, privately-owned water systems should be eligible to receive funding or financial assistance for the benefit of consumers, and means to do this within the state's legal framework should be explored.

7) Funding priorities should be developed with the assistance of the WSAC, with emphasis on providing safe and reliable supplies.

DOH is currently in the process of developing an administrative structure for the SRF, jointly with the Public Works Board and CTED. It is hoped that funds will become available by the fall of 1997. However, there still remain some significant issues, including:

State Revolving Fund - The federal State Revolving Fund program is likely to provide approximately \$18-25 million annually in capitalization grants to

the state for largely federally-driven capital needs. This amount will come nowhere near to the need that systems are currently facing.

Private Systems - There are questions concerning the state's legal ability to provide funding to non-publicly owned water systems, because of constitutional provisions regarding lending of state credit and gift of public funds. This may affect the administration of the SRF, and the ability to provide direct state funding to the vast majority of the state's water systems that are not public entities.

For-Profit Systems - Potential funding to investor-owned utilities, even if only under the SRF program, raise significant questions of windfall to for-profit owners and the ability of the UTC to address this issue within its current regulatory scheme.

State Match - The proposed federal SRF program will likely require a 20% state match for both the capital expenditures and the administration of the program. While the former may utilize PWTF-eligible projects for the capital project match, the DOH share of the administrative costs currently has no identified funding source.

Local Funds/Programs - Some local jurisdictions would like the ability to manage their own capital fund in order to develop local solutions for water system needs, but no mechanism or source of funding for that approach currently exists.

DOH, with the assistance of the WSAC, will continue to review this issue during 1997. Among the options to be considered are the following:

New State Funding: The last statewide bond issue to provide such capital funds was in 1980 (the Referendum 38 program). A new

state bond issue, on the order of \$100 million, could be proposed to the voters. Such a proposal would raise, at a minimum, questions of (a) the priority of water system funding vs. other state capital needs, (b) the state's capacity to pay off the underlying bonds (under its existing statutory bond limit, and I-601 limitations. It could be a part of a major "infrastructure funding" proposal, suggested by the 1993 OFM report "Public Works Needs and Options."

Other state financial assistance: The state could provide other forms of financial assistance, such as fund pools, or state underwriting. Other states have taken this route.

Local programs: To the extent practical when funding becomes available, a portion could be allocated to local jurisdictions to administer. Several state models exist, such as funding from the Centennial Program to Conservation Districts for stream fencing, or to local governments to finance on-site septic inspection/repair/replacement programs.

Other legislation: Legislation could be proposed to address (a) the eligibility of privately-owned systems to receive funds from state-administered programs (either a legislative finding of public interest, or a constitutional amendment), and (b) the treatment of such funding by the Utilities and Transportation Commission (UTC) for investor-owned systems.

In addition to CTED, DOH will have to develop partnerships with other state agencies to administer the SRF program. UTC, for instance, will be needed to address issues peculiar to investor-owned utilities. The potential sharing of SRF funding with the Department of Ecology, and overlapping programmatic areas, will have to be explored.

Section 5 - 1997 Washington State Drinking Water Program Plan

Drinking Water Program Goals/Organization/Program Plans

The Division will be organized, and its activities prioritized, to focus on five-year goals to assure public health protection for people in Washington.

The mission of the Department of Health's Division of Drinking Water (DDW) is to protect the health of the citizens of Washington State by assuring safe and reliable drinking water. In order to assure public health protection for Washington's citizens and visitors, DDW will focus on the following five-year goals:

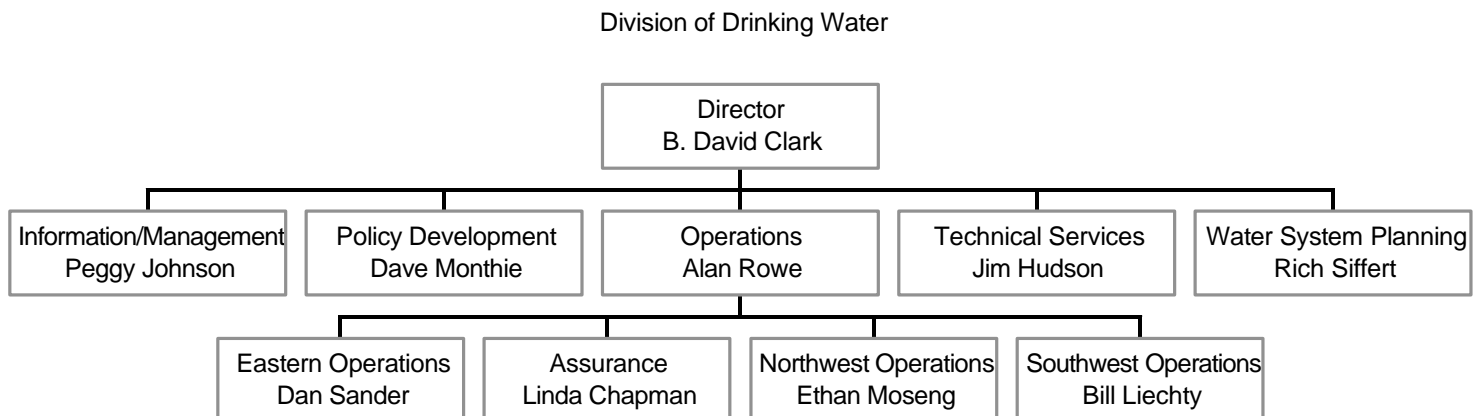
- Retain primary enforcement authority for the federal Safe Drinking Water Act (SDWA) through a health prioritized implementation strategy for SDWA requirements
- Strengthen partnerships between Department of Health, local governments, larger utilities, and other state agencies
- Improve small system compliance with public health requirements
- Prevent future contamination of drinking water through ground water protection activities, and assure adequate quantities of water for future use by water resource management activities
- Develop and implement a financial assistance program for public water systems
- Obtain stable and secure sources of funding for state and local drinking water programs

Staff within the Division total 83.8 full-time equivalents (FTEs). Operations staff located in three regional offices, (Seattle, Spokane and Olympia) carry out the program's goals and objectives. Staff assigned to program

development and oversight are located in a headquarters office in Olympia.

Protection of drinking water in Washington State involves the efforts of environmental health professional staff in Local Health Jurisdictions (LHJs) as well as the staff in the Department of Health. Thirty-three (33) LHJs serve the 39 counties in the state. Approximately 54 FTEs are dedicated to drinking water programs in these local jurisdictions.

The Division prepares a biennial program plan which establishes the activities the Division undertakes and resources allocated to accomplishing these tasks. Some of the significant activities included in the FY96 Program Plan are described in this section (Sec. 5).



Performance Measures to Evaluate the Program

Public agencies are being held more accountable to the public for how they are using public funds. The Drinking Water Program has identified 42 performance measures to better evaluate the accomplishments of the program's mission of protecting the public from waterborne health risks.

The focus of activities in the Drinking Water Program is the prevention of and reduction of health risks by ensuring the proper planning, design, construction, and operation of water systems, and providing routine and non-routine field assistance and compliance services to systems and their operators. The means to evaluate the results of these activities is performance measurement. Performance measures are a mechanism for assessing the efficiency, efficacy, and outcome related to important activities.

Performance measures are frequently categorized as outcome, output, and efficiency. Each of these categories refers to information with different values.

Outcome - A measure directly related to achieving the goal. Outcome measures are useful for determining how well the activities' objective is achieved.

Efficiency - Measures the productivity related to the activity. Efficiency measures are useful in evaluating an activities' processes and procedures.

Output - The least indicative of the performance measures. It describes how many events were counted without reference to outcome, efficiency, or effort. Most often, counts are used as workload measures.

In order to achieve a maximum value from performance measures, the drinking water program has selected a balanced representation of each of the

categories within many of the program's principal functions. The selection of performance measures are directed at individual activities. However, in combination, the drinking water program performance measures focus on quantifying the accomplishment of the program's mission of protecting the public from waterborne health risks by ensuring, in conjunction with local governments, other agencies, and the regulated community, that the state's public water systems provide safe and reliable water to people in Washington.

The Drinking Water Program has completed the identification of 42 performance measures. (See Appendix A for detail). Implementation of these measures is planned for January 1997.

Focus on Water System Compliance

One of the major goals of the program continues to be the reduction in the number of water systems considered by EPA to be in significant non-compliance with applicable monitoring and water quality standards.

The Drinking Water Program continues to emphasize compliance with requirements governing public water systems. If compliance is not achieved, the program uses a variety of enforcement tools to bring systems back into compliance.

Operating Permits

The Drinking Water program is just wrapping up the fourth year of the Operating Permit program. Currently there are approximately 4,100 public water systems in

Washington that are subject to the operating permit requirement. All Group A water systems must obtain an annual operating permit to remain in compliance with this requirement. In 1996, 3,492 permits were issued. Of the permits issued, 1,612 were classified as category green, 313 were in category Yellow, 510 were in category Red and 1,057 were in category Blue.

What do the categories mean:

Green - Indicates that the water system is in substantial compliance

with applicable drinking water regulations;

Yellow - Indicates that the system is in conditional compliance with applicable drinking water regulations;

Red - Indicates that the system is in substantial non-compliance with applicable drinking water regulations;

Blue - Undetermined (will be evaluated at a later date).

The systems receiving "Red" operating permits fell into four

general categories: (1) they exceeded the number of Department approved connections; (2) they were operating without Department approved

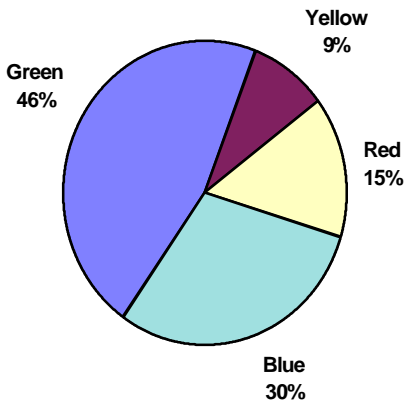
requirements; or (4) they had been issued a Departmental Order for a serious violation or were not in compliance with another Departmental Order.

the number of water systems considered by EPA to be in significant non-compliance with applicable monitoring and water quality standards. For the quarter ending March 31, 1996 (the last quarter of EPA statistics) there were 14 unresolved SNCs compared to 137 for the quarter ending March 31, 1992. The Drinking Water Program continues to work with EPA to address SNC systems and develop strategies to reduce the number of systems reaching this category of non-compliance.

In 1996 the drinking water program took the following enforcement actions against Group A public water systems:

- 57 Bilateral Compliance Agreements (BCAs) signed;
- 33 Departmental Orders issued; and
- Civil Penalties issued.

Percent of Type of Operating Permits Issued



construction documents; (3) they were a significant non-complier (SNC) with coliform monitoring

Enforcement

In general, the Drinking Water Program approaches enforcement using a step-by-step philosophy. The steps in order of severity are: (1) notification of violation and offer of technical assistance; (2) informal compliance agreement; (3) formal compliance agreement; (4) departmental order; and (5) civil penalty (fine). The Department also has the option of referring non-compliant systems to the federal Environmental Protection Agency (EPA) for federal enforcement action when the violation also falls under the jurisdiction of the federal Safe Drinking Water Act.

One of the major goals of the program continues to be reduction in

Information Management

In 1996, the Division undertook a major effort to improve its information management system. This assessment determined that only 50 Percent of the needs identified are currently supported by the drinking water data system. This information has been used to develop a feasibility study that details how these needs will be met.

The Water Supply Advisory Committee in their Report to the Legislature determined that “water quality information, including standardized reports of critical indicators, should be accurate, accessible, useful, and easily understandable.” The information should be readily useable by decision makers at the state and local levels, and by purveyors and consumers, to effectively address public health needs and water resource requirements.

An accurate and responsive data system is essential if adequate health protection is to be provided to the public.

In 1996, the Division undertook a major effort to improve its information management system. A consultant conducted a survey of the program’s information management needs for the next five years. This assessment determined that only 50 percent of the needs identified are currently supported by the drinking water data system. The Division used this information to develop a feasibility study that detailed how

these needs would be met. The enhanced capabilities, which increase the quantity, accuracy and accessibility of recorded information, will facilitate the regulation of public water systems and the protection of the health of Washington’s citizens. The major enhancements follow.

Reporting - The Division must meet the expanded reporting requirements of the federal Safe

1997 Washington State Drinking Water Program Plan

Drinking Water Act (SDWA) 1996 Amendments. As a condition of primacy, the state must adopt and administer rules developed by EPA for monitoring, treatment and regulatory enforcement of drinking water contaminants. This information management project will support fulfillment of SDWA reporting requirements.

Data Requests - The program needs adhoc query capability. Staff need the ability to extract information from the system, perform data manipulation and evaluation in non-standard ways to increase their productivity, provide better services, and to make decisions. This functionality will increase overall system flexibility in an efficient and cost effective manner.

Geographic Information System - The Division has very limited geographic information (GIS) capabilities. This functionality needs to be expanded to provide the graphical perspective needed to review/analyze certain characteristics. Without GIS, the program cannot graphically depict water quality problems and trace potential plumes of contamination.

Assurance of safe and reliable drinking water will be enhanced by the ability to track contamination.

Other Sources of Data - Vast quantities of information exists beyond the state drinking water program. The Division needs the capability to access these other sources of information. Local Health Jurisdictions, other agencies and the public need access to the Division's data. By expanding access and sharing data, the Division will gain increased data accuracy, avoid the increased costs associated with data entry and meet public information requirements.

Access to Data - This project will improve reciprocal access to statewide water quality data. The state needs to provide a system to Local Health Jurisdictions (LHJs) which will facilitate delegation of authority for regulation of public water systems to LHJs. DOH Epidemiology will benefit from this project by improving access to water quality data and correlating it to waterborne disease incidents.

Local Health Jurisdictions - In addition to the Division working to share data with Local Health Jurisdictions, the LHJs began work

to improve their capability to manage drinking water data. In April 1996, the Department of Health provided a PHIP Partnership grant to the Environmental Health Directors for a project designed to accomplish this goal. The project involves:

- Identify and categorize the needs of LHJs,
- Recommend an approach to meet these needs,
- Develop a data system, and implement in at least two LHJs by June, 1997

The Department of Health has begun an Information Resource Management (IRM) process to view and use information as an agency resource just as personnel and equipment are resources to be effectively managed. Drinking Water continues to work with the agency in this important endeavor and to ensure the data system enhancement project is compatible with IRM.

Education and Training

Adequate drinking water training and education is an important part of the Drinking Water Program. The following elements have been emphasized in order to increase compliance with drinking water rules and protect the public health.

The Drinking Water Program's mission includes the provision of adequate training and education to many diverse groups. These groups include decision makers, public water system purveyors, local health jurisdictions, consumers and drinking water staff and trainers.

The importance of providing training and education to these groups is highlighted in the Program's guidance documents. These include the Public Health Improvement Plan, Task Force 2000 Report, principles developed by the Water Supply Advisory Committee and the division's program plan. It

is the division's responsibility to ensure that people have adequate information to make informed decisions about public health as it relates to drinking water supplies.

In order to promote education and training, the Program:

- Established a Training Standing Committee to identify

training gaps and priorities and recommend solutions to training issues

- Developed an Annual Training Plan that outlines a full year's worth of training consistent with program priorities

- Staffed and chaired the Drinking Water Training Coordinating Committee. The Committee is composed of a diverse group of individuals representing organizations and consumer groups that provide and receive drinking water training/education. The purpose of the committee is to share training agendas, identify gaps in training, prioritize training, and set cooperative and individual training schedules based on training/education priorities.

- Trained others to provide drinking water training

- Produced training workshops, set up a toll-free hotline, provided appropriate publications and a quarterly newsletter, and developed a home page on the internet.

Training and Educational Activities

- In the last fiscal year, the Program produced 38 training events including: 13 *Coliform* workshops; six *Water Works Standards* workshops; four *Group B* workshops for local health

jurisdictions; four *Satellite Management* workshops; and training on sanitary surveys and cross-connection. The Program provided speakers for eight major conferences sponsored by local health jurisdictions, industry, and associations. In addition, the program co-sponsored a Drinking Water Priorities convention in two locations.

- The division sponsored a statewide water education poster calendar contest. Every elementary school in Washington received a water education calendar geared towards providing teachers the background and activities for enhancing their drinking water education efforts.

- ***Printed Materials:*** The Program maintained and updated publications that are available to help water system operators and others comply with the planning system design, testing and monitoring required to maintain safe drinking water. These publications include: 10 sets of federal and state laws and regulations; two procedures manuals; nine sets of guidelines; 52 different brochures and handouts; and 23 fact sheets. All 23 fact sheets were revised, and the brochure *Ownning and Operating a Drinking Water System* was produced.

Water Tap - The Program published the newsletter *Water Tap* quarterly. The newsletters contained training calendars and educational articles.

Toll-free line - A toll-free hotline was established and made available to anyone with drinking water questions. The program also publicized and encouraged people to use both the United States Environmental Protection Agency and American Water Works Association small system toll-free hotlines.

Internet - This past year, the program made its debut on the internet. The newly established home page, <http://www.doh.wa.gov/ehp/dw/> contains an overview of the Drinking Water Program, staff contacts, technical and emergency information, fact sheets, the latest issue of the division's newsletter, a publications list, and water related web sites.

Adequate drinking water training and education is an important part of the Drinking Water Program. These elements have been emphasized in order to increase compliance with drinking water rules and protect the public health.

Technical Assistance

In 1996 an increased emphasis was placed on Regional Office field presence for technical investigations to better protect Washington's citizens.

Technical Assistance is one of the critical components of an effective public health protection program for Washington's citizens drinking water from public water systems. It forms an important link between regulators and systems, identifying problems before they become significant health concerns, while helping the owners/operators of the systems understand the deficiencies and their responsibilities, enabling appropriate corrective actions to be taken. As such, it becomes an effective and efficient compliance tool, helping systems to remain in compliance with requirements, thereby reducing

the number of compliance actions the department is required to initiate.

Technical investigations include both sanitary surveys and special purpose investigations. Sanitary surveys are more comprehensive in nature, usually performed in accordance with Regional Office priorities. Special purpose investigations are more limited in scope, usually resulting from complaints, water quality problems or as a precursor to formal enforcement actions. The Drinking Water Program's 1995-96 Program plan placed an increased emphasis on Regional Office field presence for

community public water systems serving more than 100 services and larger non-transient non-community (NTNC) water systems.

Minimum statewide guidelines developed in the fall of 1995, helped establish a baseline for technical investigations, and each regional office identified six to eight categories of water systems in order to prioritize staff inspections. Since each office identified emerging public health problems as a priority, the number of systems requiring an investigation increased throughout the year.

Total Sanitary Surveys and Special Purpose Investigations by Region for 1995-1996

	Sanitary Surveys	Special Purpose Inv.	Regional Totals
Eastern Region	200	34	234
Northwest Region	165	36	201
Southwest Region	111	61	172
TOTAL	476	131	607

Project Design and Approval

In 1996, DOH drafted detailed revisions to its engineering design standards (Waterworks Standards) for Group A public water systems. In the interim before revised regulations are adopted and the Waterworks Standards are finalized, a new policy (Alternative Review and Approval) directs how this process is to be implemented.

In 1996 DOH drafted detailed revisions to its engineering design standards for Group A public water systems (Waterworks Standards Guidance Manual). The intent of this manual is twofold: 1) to assist DOH regional engineers in applying consistent review procedures, and 2) to reduce the level of DOH involvement in review of engineering project reports and construction documents.

Engineers, water utilities and other interest groups/stakeholders provided oral comments at seven workshops in various parts of the state, and submitted detailed written comments to DOH. These comments were used to provide the department guidance in proposing changes to drinking water regulations for Group A public water systems (WAC 246-290). The approach used in drafting design-related regulations was to provide minimum performance based design standards based upon public health significance.

Changes were also proposed to the engineering project review and approval process. As proposed in the draft regulations, systems with a current approved Water System Plan (WSP) may elect to proceed with construction and use of distribution-related facilities without DOH approval, provided certain conditions are met:

(1) All projects should be included in the capital improvement plan of the Water System Plan at a minimum, and all "major projects" as defined by the

State Environmental Policy Act (SEPA) must be a part of the approved Water System Plan or the WSP must be amended prior to construction;

(2) The system owner must submit a request for permission to be exempted from DOH review and approval process through a signed application (departmental form);

(3) The WSP includes system design and construction standards which includes sizing criteria, performance standards, and construction materials and methods.

(4) The WSP describes the internal and external engineering project review processes;

(5) The water system maintains a project summary file for each project, which may be reviewed by DOH upon request; and

(6) The system submits a Construction Report for Public Water System Projects (departmental form) within 30 days of completion for each project addressing physical tests, water quality, disinfection and physical capacity.

DOH will maintain a list of systems eligible to use this process. A system may become eligible by obtaining WSP approval, or by amending its WSP, if necessary. In some cases, only an application may need to be submitted for the initial request. A system must renew its eligibility every time an updated plan is required. DOH will also establish a procedure to specifically audit

systems using this process to determine the extent of compliance and can revoke eligibility for any system that does not comply with the conditions or public water system regulations. It is also anticipated that DOH will review the process with systems through pre-plan conferences and sanitary surveys.

In the interim before revised regulations are adopted and the Waterworks Standards are finalized, a new policy (Alternative Review and Approval) directs how this process is to be implemented. The policy is similar to the proposed regulation, with a couple of notable differences:

(1) Distribution-related projects other than mains must be reviewed and approved by a system-retained professional engineer licensed in the state of Washington;

(2) Instead of requiring a third party engineer, DOH will have the ability to inspect system project files under proposed regulatory language; and

(3) A Construction Report for Public Water System Projects (departmental form) must be submitted to DOH within 60 days of completion.

Once the regulations are adopted and the Waterworks Standards are finalized, distribution mains and other distribution-related projects will essentially be treated the same. Furthermore, detailed construction plans and specifications will no

longer be required for distribution main projects.

DOH is also in the process of updating the Planning Handbook to include recent changes in water system planning requirements, and

will include a chapter that addresses the type and level of system performance and design criteria that will be expected. The Planning Handbook will be available in early 1997. A final

draft of the Waterworks Standards Guidance Manual is scheduled to be available in the late Spring of 1997.

Controlling Water System Cross-Connections

National disease outbreak statistics indicate that as many as fifty percent of all reported disease outbreaks associated with drinking water are caused by cross-connection with water not safe to drink. A 1994 survey of Washington water systems serving 100 or more connections indicated that 58 percent did not have an active cross-connection control program in place. During 1996, DOH developed a comprehensive approach for addressing this problem.

A cross-connection is a direct or indirect connection between the distribution piping of a public water system and either customer plumbing or on-site piping that may contain any other liquid or gas. Reversal of normal flow in the public water system through a cross-connection can allow contaminants into drinking water either through back pressure or back siphonage.

On several occasions over the past decade, cross-connection-related instances of illness have occurred within the state. The importance of cross-connection control is underscored by national disease outbreak statistics. These indicate that as many as fifty percent of all reported disease outbreaks associated with drinking water are caused by cross-connection with water not safe to drink (non-potable).

A 1994 survey of Washington water systems serving 100 or more connections indicated that 58 percent did not have an active cross-connection control program in place. Considering the number

of systems not responding to the survey, it is possible that more than 70 percent of the State's public water systems may not have an active program.

Recognizing that smaller systems (those serving fewer than 100 connections) are even more unlikely to establish a cross-connection control program than larger systems, it is clear that many water systems are placing their customers at unacceptable levels of risk to potential illness from cross-connections.

The Department is concerned about the results of the recent survey. The state drinking water regulations under WAC 246-290-490 require all Group A public water systems to develop and implement a cross-connection control program that is acceptable to the Department. Steps the Department is taking include:

Regulation Revision - Revising the cross-connection regulations to clarify purveyor responsibilities and to define the minimum element of an acceptable cross-connection program.

Increased Emphasis - Increasing efforts to encourage development and implementation of cross-connection control programs in the coming year for water systems that do not currently have active programs.

Sanitary Surveys - Making cross-connection control a focal point in the Department's routine technical investigation (sanitary survey) program.

Enforcement - Increasing enforcement of the cross-connection regulatory requirements for larger systems.

Fortunately, the largest water systems have adequate cross-connection control programs. These protect the more than 60 percent of the population served by public systems. However, it is estimated that more than a million people are served by public water systems with inadequate cross-connection control programs. These people are exposed to a continued risk to illness and disease.

The following terms and definitions are commonly used in drinking water .

Centennial Fund:	The funds appropriated to the Drinking Water Program in 1993 that replaced state General Funds from the Centennial Clean Water Account.
Coliform Violations:	Either a violation of the maximum contaminant level (MCL) for E. coli, fecal coliform, or total coliform bacteria or a monitoring violation due to insufficient sampling for a month.
Cross-Connection:	A direct or indirect connection between the distribution piping of a public water system and either customer plumbing or on-site piping, which may contain a liquid or gas contaminant.
Cryptosporidium:	A microorganism (protozoan) that forms cysts and causes a spectrum of illness in humans ranging from asymptomatic infection to gastroenteritis (diarrhea and abdominal cramping) to life-threatening disease for immunocompromised patients. Currently, no antibiotics proven to be effective against it. It is similar to the parasite known as “Giardia,” except cryptosporidium survive better in the environment and are more resistant to disinfectants.
Cyclospora:	A microorganism resembling blue-green algae associated with prolonged or relapsing diarrhea.
Environmental Protection Agency (EPA):	Implements the SDWA; sets national drinking water standards; provides money/assistance to states; conducts drinking water research/training; and administers other federal environmental laws.
Group A System:	Public water system serving 15 or more connections or 25 or more people.
Group B System:	Public water system serving less than 15 connections.
GW:	Ground water under the influence of surface water.
MCL:	Maximum contaminant levels (MCLs) established by the EPA. MCL is the highest amount of a contaminant allowed in drinking water.
Model Toxics Control Act (MTCA):	Washington’s citizen mandated toxic waste cleanup law, the Model Toxics Control Act (MTCA) (Chapter 70.105D RCW) was established in March 1989. In developing the Act’s cleanup regulation, Ecology established cleanup standards and requirements for cleanup actions. MTCA funds hazardous waste cleanup through a tax on hazardous substances.

Glossary

Operator Certification Program:	Examines and certifies the competency of operators in charge of all but the smallest Group A public water systems.
Public Health Improvement Plan (PHIP):	The state's "blueprint" for protecting the health of Washington's citizens, implemented by local communities seeking stable public health funding and the means to address unresolved public health problems.
Public Water System:	Any system (excluding a system serving only one single-family residence and a system with four or fewer connections all of which serve residences on the same farm, providing piped water for human consumption) including any collection, treatment, storage or distribution facilities under control of the purveyor and used primarily in connection with such system; and collection or pretreatment storage facilities not under control of the purveyor primarily used in connection with such system.
Reauthorization (SDWA):	Safe Drinking Water Act (SDWA) of 1996 - Changes and additions to the federal SDWA passed by the Congress in August 1996.
Referendum 38 Program:	Voter-approved referendum to sell bonds to fund water supply improvements, fully described in Chapter 43.99E RCW. This referendum was approved by the electorate in the general election of November 1980. The overall referendum includes municipal and agricultural water supply improvement programs. The Department of Ecology administers the agricultural program.
Resource Protection:	Activities and programs necessary to provide the highest quality source of water available, prevent contamination of those sources, and ensure the long-term reliability of those sources.
Risk Assessment:	A qualitative and quantitative evaluation performed in an effort to define the risk posed to human health and/or the environment by the presence of potential presence and/or use of specific contaminants.
Safe Drinking Water Act (SDWA):	Passed in 1974, includes water quality standards, sampling, treatment and public notification requirements. Amended in 1986 and again in 1996.
Sanitary Survey:	An on-site examination of the water source, facilities, equipment, operation and maintenance procedures, and management practices of a public water system for the purpose of evaluating the adequacy of the water system for producing and distributing safe drinking water.

State Environmental Policy Act (SEPA)	SEPA is intended to help everyone make better environmental decisions. The act contains specific substantive policies and goals which apply to actions of all levels of government within the state. SEPA works together with other laws to accomplish its mandate.
Significant Non-Compliance (SNC):	Violation of state drinking water rules where such violation or violations may present an immediate or significant risk to the health of consumers.
Source Monitoring Program	Regulatory program oriented to the proper monitoring of source water quality and enabling where applicable, waivers to routine source water monitoring.
Source Protection:	Effective pollution prevention programs identify potential contaminant sources and allows regulatory agencies to target them.
Source Water Protection Program:	Program mandated by the SDWA to (1) delineate (identify) the boundaries of the area(s) that contribute water to public drinking water supplies (both ground water and surface water) and (2) assess the susceptibility of the drinking water (source water) to contamination sources within the identified area. In Washington, this program is/will be a combination of Department of Health's wellhead protection program and watershed control program.
Task Force 2000:	Appointed by DOH in 1993, the task force's mission was to develop state policy recommendations regarding how a comprehensive drinking water program should be structured/funded in Washington State by the year 2000.
Water Supply Advisory Committee (WSAC):	An advisory group created by SB 5448 in 1995, the WSAC reflects a broad range of interests in the regulation of water supplies substantially affected by the department's role in implementing state and federal requirements for public water systems.
Water Works Distribution Standards:	A set of State Board of Health-approved water system distribution design standards (for Group A public water systems).
Water Works Treatment Standards:	A set of State Board of Health-approved water quality treatment design standards (for Group A public water systems).

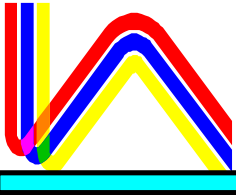
Appendices

Performance Standards

Program Element	Performance Measure	Measure Type
Administrative Support	Percent of Public Disclosure requests handled within the limits	Efficiency (Rate)
Compliance	Ratio of PWSs with violations responded to & PWS returned to compliance	Outcome (Effectiveness)
	Ratio of adequacy responses handled within the time limit to total adequacy responses	Efficiency (Ratio)
	Percent of PWSs with each Operating Permit color by reason for color.	Output (Rate)
Data Management	Ratio of work request disposed of in the quarter to total number of work requests	Efficiency (Ratio)
	Percent of analytic data received in electronic format.	Outcome (Rate)
	Ratio of time to complete major project element to estimated completion date	Efficiency
Distribution Standards	Count of PWSs with coliform MCL (by acute and nonacute).	Output
	Sum of population served by PWSs with coliform MCL (by acute and nonacute).	Outcome
	Count of PWSs without optimal corrosion control and population served by these systems (by category).	Output/Outcome
Distribution Standards	Count of PWSs with monitoring violations (by contaminant Major Coliform, Repeat Coliform, Lead Copper Initial).	Output
	Count of PWSs with effective cross-connection control program.	Output
Distribution Standards	Sum of population served by PWSs with effective cross-connection control program.	Outcome
Division Management	Ratio of personnel evaluations completed on time to personnel evaluations required	Efficiency
	Ratio of new employees appropriately trained within 60 days of employment to new employees	Efficiency
Education & Training	Percent of small PWSs with appropriate personnel receiving training	Output (Rate)
	Count of workshop and training events with drinking water issues that were coordinated or conducted by DDW.	Output
	Ratio of PWSs with complaints having a consumer health risk to PWSs with any consumer complaint	Output (Rate)
Local Government	Count of organizations with contractually delegated responsibilities (by organization category type)	Output
Operator Certification	Sum of population served by PWSs with appropriately certified operators	Outcome
	Ratio of PWSs with appropriate complement of certified staff to PWSs required to have certified operators	Output (Ratio)

Appendix A

	Ratio of exams revised and updated in the past 3 years	Efficiency
Project Approvals	Count of PWSs with delegated authority for distribution project review.	Output (Raw)
	Count of projects submitted by systems using the streamlined process.	Output (Raw)
	Average # of Days from receipt to first review for documents completed this period.	Efficiency
	Ratio of the number of documents reviewed within 30 days and the total # of projects reviewed.	Efficiency Output (Ratio)
Policy & Regulation Development	Ratio of policies and regulations developed on time to number of policies and regulations developed (by category)	Efficiency
Reuse	Ratio of reuse plans reviewed within 30 days of receipt	Efficiency
Source Protection	Percent of sources eligible for monitoring reduction waivers based upon source water protection measures	Outcome
	Ratio of population served by PWSs with Wellhead Protection Plans to number of groundwater sources cover by those plans	Outcome
Source Water Quality	Ratio of sources exceeding a detection limit to sources monitored or with waiver (by parameter group)	Output (Rate)
	Count of sources exceeding an MCL or SAL limit (by parameter group).	Output
Source Water Quality	Sum of populations served by systems with source water exceeding an MCL or SAL and having ineffectively treated (by parameter group).	Outcome
	Ratio of sources monitored to sources required to monitor.	Output (Rate)
	Ratio of population served by systems with treatment technique violation to systems with treatment technique violation	Outcome
Technical Investigations	Percent and count of PWSs with current technical investigation (by priority group)	Output (Rate)
	Count of technical investigations (by investigator - DOH or 3rd party)	Output
	Sum of population served by PWSs with current technical investigation	Outcome
Water System Plans	Ratio of PWS in complying with planning requirements (includes those on compliance schedules) to PWSs with planning requirements	Output/Outcome
	Rate of Water System plans reviewed within 90 days of receipt	Efficiency
Water Supply Planning	Ratio of CWSPs over 10 years old to total CWSPs	Output
	Ratio of population served by PWS with conservation plans in place to PWSs with conservation plans.	Outcome
	Count of counties with SMAs.	Output
	Count of SMAs.	Output
	Ratio of GMA comprehensive plan related documents reviewed and commented on to total number of plans reviewed (CTED list).	Output



Water Supply Advisory Committee Legislative Report **Executive Summary**

Problem

The state's public health system now finds itself severely limited in its ability to assure Washington's residents safe and reliable sources of drinking water. This is due to threats of emerging diseases, the presence of chemical contaminants, complex federal standards, and the sheer number of small water systems in Washington. Public water systems also face challenges in bringing their facilities up to standards and meeting the expectations of consumers for safe and reliable drinking water. Many are unable to afford either necessary repairs or the installation of new facilities for assuring water safety.

Background

The Washington State Department of Health was directed by the legislature in 1995 (SB 5448) to form a water supply advisory committee. The charge of the committee is to advise the department on the Drinking Water Program, review program funding, and make recommendations regarding implementation of the federal Safe Drinking Water Act (SDWA) and the Public Health Improvement Plan.

In order to complete its 1996 Legislative Report, the committee developed a series of Guiding Principles describing how a comprehensive statewide drinking water program should function. These principles were used as a framework for evaluating drinking water needs and priorities, and identifying key differences between how the state's program currently assures the safety and reliability of drinking water, and how the committee believes such services should be delivered in the future. Recommendations based on this analysis were then developed by the committee.

The August 1996 reauthorization of the federal SDWA triggered refocusing some of the committee's work to take advantage of the opportunities in that Act, including access to funding through the State Revolving Fund for public water system infrastructure needs.

Key Findings

The committee recommends the following actions in the coming biennium:

- Full implementation of the revised federal SDWA;
- Delegation of responsibility and accompanying funds from the state to local health jurisdictions, based on voluntary negotiated agreements;
- Improving the drinking water data system to produce accurate, timely and more accessible information;

- Increasing the availability of appropriate training and technical assistance from the program and third parties for water system operators;
- Increasing the number of routine field visits and other technical investigations for water systems; and
- Developing a more comprehensive and accurate monitoring program for water system sources of supply.

Funding Recommendations

Increased funding for personnel and matching funds are required if the Key Findings of the committee are to be implemented. The committee recommends a balanced funding strategy that equitably distributes costs among those receiving services, and provides positive incentives. The recommended funding package would provide the following additional dollars per biennium:

- Federal Grant (Public Water System Supervision) \$1.5 M
 - State Revolving Fund (Federal funds - match required) \$3.8 M
 - Restructured Fees¹ \$2.1 M
 - A dedicated portion of the water utility tax \$2.9 M
- (It should be noted that support for restructured fees is dependent on dedication of a portion of the Utility Tax.)
- The Model Toxics Control Act (MTCA) \$.79 M

Why This Is Important to Washington Now

The people of Washington State expect and deserve safe and reliable drinking water. The recent changes in federal law offer an opportunity to take significant steps toward reaching that goal. By working together we can develop a strong and resilient system that provides ongoing protection, proficient and affordable treatment and delivery, and accessible information to safeguard public health.

Implementing these recommendations will:

- Protect the health of our citizens from threats of waterborne illness and disease;
- Let us control our own destiny, rather than using a Washington D.C.-directed “one size fits all” approach to implementing federal regulations; and
- Enable the formation of partnerships between state government, local government and utilities to ensure that the regulatory process is reasonable and appropriate for our state.

More Information

B. David Clark, Director
Department of Health Drinking Water Program (360) 753-1280

¹ Only \$600,000 of this amount is actually new revenue. The balance represents a variety of fees that are now assessed individually but that are proposed to be rolled into a single yearly assessment (hence the term “restructured fees”). The \$600,000 includes 20% agency overhead charge.

Water Supply Advisory Committee Drinking Water Principles

The state of Washington needs to deliver appropriate services to people in the state in order to ensure safe and reliable supplies of water. State, federal and local public health jurisdictions, including tribal governments, public water systems (PWSs) and their consumers, share the responsibility for promoting and protecting the health of their communities. The following are basic principles that will guide how a comprehensive drinking water program should function.

Public Health Protection

All consumers of drinking water from PWSs should be assured of safe, reliable and affordable drinking water meeting basic public health protection standards. These standards, and the degree of regulation, are articulated in State Board of Health policies and the Public Health Improvement Plan (PHIP). The degree of regulation required may be different depending on the type and size of the system. The degree of regulation applicable to Group A and Group B systems should be made clear to the consumer at the time of the sale of property, through mechanisms such as mandatory disclosure statements or appropriate wording on property title documents.

The protection of public health through an effective statewide drinking water program is a fundamental responsibility of state and local government. The state should provide the resources and comprehensive funding mechanism necessary to develop and maintain the capacity to protect public health and retain primacy for implementing the Safe Drinking Water Act (SDWA).

In allocating resources to drinking water program activities, prioritization should be made based on public health risk and cost-effectiveness. In evaluating the severity of public health risk the following factors should be considered:

- Degree of Hazard;
- Populations at Risk;
- Need for Intervention; and,
- Maximizing of Health Benefits.

Functions of the Department of Health and Local Jurisdictions

All levels of government have a collaborative responsibility for protecting public health through an effective drinking water program. Responsibilities for the program shall be carried out according to principles and standards identified in the PHIP.

The Department of Health (DOH) should develop a long-range strategic plan, as well as time-limited and measurable program objectives and performance standards. Information should be collected and analyzed in order to evaluate the effectiveness of program activities in reducing risk and improving health status, and to determine whether the program is achieving its stated objectives. Local jurisdictions should be encouraged to participate in the development of the plan, and to integrate their program activities into it.

In developing or modifying regulatory programs, the state must weigh economic impacts on the affected regulated communities, and using its ability to be flexible within its SDWA mandates, adopt programs that are the least burdensome and still achieve public health objectives. Management of costs should be factored into any arrangements for delivery of services, with a preference for the least-cost method of delivery. Finally,

implementation plans for regulatory requirements should include a process for evaluating whether the program is achieving its stated objectives. The state should rely on its

programs to certify the competence of professionals in the drinking water field who deliver direct services to water systems or their customers. Efforts also should focus on measures to ensure the quality of such certification programs.

State and local health jurisdictions (LHJs) should work to ensure that utilities are included in the PHIP process.

Governance and Delegation

DOH has primary responsibility for all PWSs, including responsibility for providing technical assistance, information, and regulation. Capacity building for the local oversight of public water supplies should be pursued in accordance with the principles of the PHIP, and the current practice of negotiated agreements (JPOs) between DOH and local jurisdictions should be continued.

It is in the best interests of consumers and utilities that regulation enforcement and program implementation occur with state oversight, at the lowest appropriate level of government possible. The development of local jurisdictions' ability to administer drinking water regulations should be encouraged, with the state providing adequate funding and sufficient direction to ensure that programs are consistent statewide. The state should provide consultation and technical and financial assistance to those who carry out public health functions at other levels of government.

Delegation and shifting of functions should be phased in and coordinated with other state activities, such as PHIP and regulatory reform. Routine audits should be conducted to ensure that the state program is being properly implemented when it is delegated. Where necessary, the state must be ready to re-assume delegated activities.

Delegation must not result in a decreased level of public health protection, nor in conflict or inconsistent application of regulations. It should not be used to shift problems from one level of government to another level.

Third party providers should be used where services can be provided more cost-effectively than by state or local government. In this context, "cost-effective" includes the concepts of timely delivery and appropriate quality assurance functions.

Both the regulated community and the general public must have a clear understanding of who has regulatory authority and responsibility for delegated functions. The responsibility for program implementation must be linked with the authority to make decisions.

Overlapping responsibilities between agencies should be coordinated so that the various requirements are clear to the applicants, are met prior to granting of final approval, and agency approvals occur in reasonable order. For this to occur:

- State and local government should address water supply availability in their land use planning;
- A mechanism needs to be put in place to address interim needs in order to complete a successful regional water resource plan;
- Local governments are responsible for providing land use applicants with state and local water system requirements, and assuring compliance prior to land use approval; and
- As increasing demands are made on our water resources, applicants will have to assist state and local governments in ensuring that adequate data is available, so that an informed decision on water availability can be made.

Program Funding

The finance and governance structure must:

- Provide for stable, equitable revenue sources.
- Include proportionate financing responsibilities among state and local governments for those public health functions that must be universally and equitably available statewide.
- Hold all publicly funded agencies and organizations accountable for the allocation and use of resources.
- Link the responsibility for financing with the authority for decision-making.
- Support core functions of assessment, policy development and assurance.
- Encourage partnerships with other agencies, tribal governments and organizations that affect delivery of public health and related services.

The state/local shares of financing core function capacity should be approximately equal statewide by 2001 . (Source: the *Public Health Improvement Plan*, referencing principles for public health agencies in general.).

The need for funding must be well-documented, analyzed and defensible.

Public (non-fee) funds should support program capacity to the maximum extent practical. Examples include: federal funds, state and local general fund, dedicated utility tax, PHIP funds, and other appropriate public funding sources.

Services that benefit all public water systems and the general public should be funded through a mechanism that is equitable and not related to a specific service provided.

The basis for Operating Permit fees and fees for service should be clearly defined, fair, and allocated rationally and equitably.

The Operating Permit fee should be based on a combination of the following principles:

- All water systems pay on an equitable basis to support program capacity (services that benefit all).
- Systems pay based on the services they actually use. Although this will result in a higher per-connection charge for smaller systems, this is consistent with other operating principles and recognizes real demand for services.
- The level of support for both program capacity and program services should be based on an evaluation of the costs of providing those services.

If a responsibility is delegated to either a local government or a third party, funding that the state is spending on providing the service (minus oversight) should also be transferred to the entity providing the service. If the services are beyond those provided by the state, the provider is responsible for securing funding.

Water System Funding

Significant new state resources should be made available to assist water systems in meeting new capital needs. This includes resources to ensure the prompt availability of the state's share of any federal funding that may become available under the State Revolving Fund (SRF) or other programs. If funding through SRF is either inadequate or not available in a timely fashion, a legislative proposal authorizing statewide bonds for identified water system capital needs should be developed and submitted to the people of the state for approval.

State funding programs should provide assistance in a manner consistent with DOH objectives for achieving long-term financially responsible and well-managed systems (viability), preventing the proliferation of new nonviable

systems, and financing restructuring activities by satellite managers and others. The provision of financial assistance should be

linked to efforts to have systems operate in compliance with relevant regulatory requirements, recognizing that such financial assistance will focus on public health, but may not be adequate to meet all SDWA requirements. A state or local mechanism should be developed to provide a source of capital funding for water systems in those counties that have accepted delegation of program functions from DOH, in order to facilitate development of local solutions to water system problems. It should be based on the local jurisdiction's evaluation of system needs.

The state should promote passage of a federally funded program to assist water systems. Development of the financial assistance program for water systems should be shared with Environmental Protection Agency (EPA), and assistance conditioned upon a system's meeting financial viability requirements.

If SRF or statewide bond funds become available, privately-owned water systems should be eligible to receive funding or financial assistance for the benefit of consumers, and means to do this within the state's legal framework should be explored.

Funding priorities should be developed with the assistance of the Water Supply Advisory Committee (WSAC), with emphasis on providing safe and reliable supplies.

All alternative forms of providing financial assistance to water systems should be explored.

The legislature should give special attention to the capital improvement challenges facing small communities, of which drinking water infrastructures is but one.

Data Management/Sharing

Water quality information, including standardized reports of critical indicators, should be accurate, accessible, useful, and easily understandable. The information should be readily usable by decision-makers at the state and local levels, and by purveyors and consumers, to effectively address public health needs and water resource requirements .

To be effective, all public health jurisdictions must have access to and use an electronic information management system. This system must have the capability for the collection and analysis of administrative, demographic, epidemiologic and service utilization data, as well as other data sets as necessary, to enable planning, administration, evaluation and education for public health protection.

The state must maintain an information management system with up-to-date and accurate information, with adequate retention to provide historical trends on water quality and system performance meeting both state and local needs. The system should be able to link and share water quality data with local and statewide databases in both the public and private sectors.

The state should ensure a high standard of data collection, analysis, dissemination and risk communication, by promoting partnerships and providing leadership, coordination, consultation, and technical assistance.

A basic element of the Water Quality Monitoring Program should be to ensure the validity and quality of the data used to evaluate and assess the degree of public health risk.

The monitoring data collected by the state is a valuable resource that should be actively exploited for its potential to protect public health and provide an economic benefit through easing water systems' monitoring responsibilities.

Cooperation and sharing of information between water systems should be encouraged.

Technical Investigations

Sanitary Surveys should be a fundamental vehicle to evaluate water system performance, assess public health needs, and determine appropriate corrective or compliance measures. Surveys need to be conducted on a routine basis for all systems, and the Sanitary Surveys should incorporate to the degree appropriate an element of operator training and education.

Special Purpose Investigations should be undertaken when there is a recognized potential threat to public health.

The state's program should focus on systems with the largest populations. Smaller systems should be surveyed by LHJs or third parties with DOH's role being to ensure that those performing the surveys are properly trained and that information from such surveys is used to improve system performance. DOH should work with local jurisdictions and third parties to perform Sanitary Surveys when such partnerships are cost-effective and efficient.

Compliance

In carrying out the public drinking water program, it is the role of the responsible authority to develop and implement techniques for bringing all systems into compliance. These techniques must include clear communication of requirements to the public water systems to assist them in fulfilling their responsibility in complying with the regulations.

A compliance program for water systems should include the following components:

- Balance between enforcement activities for violations that are preventive in nature (i.e., system infrastructure) and those that are remedial (i.e., MCL violations);
- Enforcement actions tailored for out-of-compliance water systems based on actions which have proven most effective for similar types of systems/ownership;
- Informal enforcement techniques that penalize non-compliant systems;
- A comprehensive system of financial incentives and penalties/disincentives to compliment informal enforcement techniques;
- Enforcement actions commensurate with the severity of the violation, and increase for subsequent violations;
- In cases where more stringent local regulations exist, compliance activities directed toward meeting local regulations; and
- After a system has been notified of its violation, further compliance efforts focused on using informal tools and educational methods. However, formal compliance tools should be used when it is determined that public health is threatened or in those situations where informal tools have been used without success.

Prevention should be balanced with remediation in assuring drinking water quality:

- When remediation is required, the responsible health authority should coordinate with other agencies to ensure that solutions are sustainable and environmentally compatible.
- When practical, source protection should be supported as a preferred water protection strategy.
- Prevention efforts should be supported at a level which balances reduction in future remediation with current prevention costs.
- Long-term future prevention efforts should be funded at a level to reduce future remediation costs.
- Remediation of significant health and safety problems already identified should take priority over prevention.

Compliance efforts should be prioritized based on population affected and the type of violation.

Appendix C

The responsible authority should use incentives (such as variable fees) to encourage Group A and B systems to achieve and maintain compliance and viability.

Planning

Planning efforts should:

1. Ensure that federal, state and local regulatory mandates are met in a manner that:
 - Protects public health;
 - Assures reliability in the system and source;
 - Utilizes a preventive approach; and,
 - Drives for clarity in state and local regulatory roles and responsibilities.
2. Be designed and integrated to be useful to the operation and management of water systems, with emphasis on public health:
 - Planning decisions should be updated periodically in light of new information;
 - Planning processes, decisions, and data collected should be useful to the water system to which it applies;
 - Greater emphasis should be placed on protecting public health;
 - SDWA implementation should be addressed;
 - Planning requirements should be integrated with state and local land-use planning requirements, so that as water system plans are developed they are consistent with those requirements;
 - There should be certainty for water systems regarding water availability; and
 - There should be recognition that regional planning is necessary to resolve value conflict.
3. Coordinate with other state and local agencies to assure:
 - Consistency in decisions among regulatory agencies on growth management, water resource availability and approval of individual and regional water system plans in the local planning context;
 - Clarity in roles and responsibilities among state and local agencies, with inclusion of tribal and foreign government treaty holders as applicable, so that consistency and clarity in timely decision-making can be achieved; and
 - Coordination focused through a regional planning process.
4. Collect and disseminate information in a format that is easily understandable, to inform and assist decision-makers in a way that:
 - Permits them to assess whether planning is an effective management tool;
 - Continually revises and upgrades information in a timely manner;
 - Compliance with water quality measures can be determined; and
 - Is fed into the decision process and permits decisions to be continually evaluated and revised as necessary.

Provide assistance to purveyors and users in a way that takes into account and is sensitive to differences in end-user needs, and is clear, straightforward, practical, and implementable.

Focus on the prevention of non-viable systems.

Planning should be encouraged through positive incentives.

Public Education and Training

Many water quality problems can be prevented by educating water purveyors and ensuring that they are properly trained and knowledgeable about the potential for health risks associated with their systems.

All opportunities that arise during routine program implementation (Sanitary Surveys, etc.) should be used to provide technical assistance and training to water system purveyors and operators. This is especially useful for small water systems.

Methods to inform and educate the public about drinking water quality and its implications for public health must be developed. These should include methods for providing education to small communities without organized water system ownership regarding how to organize, secure grants and/or loans, and acquire the system(s).

Training and Smaller Water Systems

Smaller water systems have unique characteristics that require tailored methods of assistance in order to reduce risk to human health from contamination of the drinking water they serve.

Smaller water systems would benefit from training to assist them with:

- Achieving Compliance (Remediation);
- Remaining in Compliance; and
- Restructuring/Consolidation.

The Initiator/Standard Setter for this assistance should be DOH. Providers of training can come from a variety of sources including the private sector.

Major areas of training should include, but not be limited to:

- Education/Awareness
 - Purveyor/Operator Level
 - Consumer Level (*Caveat Emptor*)
- Compliance Assistance
- Financial Assistance
- Alternative Technologies
- Best Available/Affordable Technologies

WSAC Members

Jones Atterberry
WA Assoc. of Realtors

Dr. William Budd
WSU

Walter M. Canter
WA Assoc. of Sewer & Water
Dist.

The Hon. Gary Chandler
WA State Representative

Linda Crerar
Dept. of Ecology

Dr. Don Davidson
City of Bellevue

Lou Dooley
SW WA Health Dist.

Gene Eckhardt
UTC

The Hon. Darlene Fairley
WA State Senator

Ralph Ferguson
Camano Island Water System

Diana Gale
Seattle Water Dept.

Mike Grady
CTED

Cas Hancock
Evergreen Rural Water Assoc.

Kris Heintz
WA Assoc. of Water Systems

Ron Hess
Manufactured Housing
Communities of WA

The Hon. Harold Hochstatter
WA State Senator

Charlie Johnston
E Wenatchee Water Dist.

Hannah Kimball

The Boeing Company

John Kirner
Tacoma Water Dept.

John Kounts
WA PUD Assoc.

Lois Lopez
CTED, TESSA

The Hon. Ken Madsen
Pierce Co. Councilmember Dist.
#3

Lloyd Moody
OFM

Maureen Morris
Assoc. of WA Cities

Clair Olivers
Everett Public Works

Paul Parker
WA State Assoc. of Cos.

The Hon. Debbie Regala
WA State Representative

John Robischon
South Sound Utilities

Judy Turpin
WA Environmental Council

The Hon. Jim Wall
Commissioner, Chelan Co. PUD

Jack Watkins, Jr.
Montgomery Watson

Larry Worley
EPA Region 10

Other Participants

Bill Alves
Seattle Water Dept.

Tom Anderson
Whatcom Co. PUD

Ben Bonkowski
Dept. of Ecology

Sally Feldman
WA Assoc. of Realtors

Gregg Grunenfelder
Thurston Co. Health Dept.

Lou Anne Houck
League of Women Voters

Ruth King
OFM

Vicki Kirkpatrick
WA State Assoc. of Co.

Jerry Opatz
EPA Region 10

Udaya Patnaik
Rural Community Assistance
Corp.

Skip Richards
WA Associated Water Systems

John Stuhlmiller
WA State Senate
Republican Caucus

Mike Vinatieri
Lewis Co. Public Services

Pat Wiles
Harbor Water System

DOH Staff

Dave Clark
Linda Chapman
Michael Heath
Peggy Johnson
Bill Liechty
Barbara McLain
Dave Monthie
Ethan Moseng
Rich Siffert
Carolyn Terry

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Washington State Department of

Health

Environmental Health Programs

Drinking Water Program

Key Contacts

Administration

B. David Clark, Director

Division of Drinking Water

(360) 753-1280 FAX (360) 586-5529

Internet Address: bdc0303@hub.doh.wa.gov

Operations

Alan Rowe, Operations Manager

Division of Drinking Water

(360) 753-5986 FAX (360) 586-5529

Internet Address: akr0303@hub.doh.wa.gov

*Design Review and Approval, Technical Investigations/Facility Inspection,
Operations/Treatment Evaluation, Public Water System Adequacy
Determination*

Bill Liechty, Southwest Region Operations

(360) 753-5953 FAX (360) 664-8058

Internet Address: dwl0303@hub.doh.wa.gov

Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Kitsap, Lewis, Mason,
Pacific, Skamania, Thurston, and Wahkiakum Counties

Ethan Moseng, Northwest Region Operations

(206) 464-6398 FAX (206) 464-7059

Internet Address: emm0303@hub.doh.wa.gov

Island, King, Pierce, San Juan, Skagit, Snohomish, and Whatcom

Dan Sander, Eastern Region Operations

(509) 456-2457 FAX (509) 456-2997

Internet Address: dks0303@hub.doh.wa.gov

Adams, Asotin, Benton, Chelan, Columbia, Douglas, Franklin, Ferry,
Garfield, Grant, Kittitas, Klickitat, Lincoln, Okanogan, Pend Orielle,
Spokane, Stevens, Walla Walla, Whitman and Yakima Counties

Planning and Policy

Development

Rich Siffert, Water System Planning

(360) 753-4299...FAX (360) 586-5529

Internet Address: rls0303@hub.doh.wa.gov

Individual and Regional Water System Planning, Growth Management,

Water Resources and Conservation, Small System Management, Satellite Systems, Wellhead Protection, Water Utility Emergency Planning, Water Utility Financial Viability, State Environmental Policy Act Coordination.

David Monthie, Policy Development

(360) 664-9583.....FAX (360) 586-5529

Internet Address: dlm0303@hub.doh.wa.gov

Assessment, Public Health Improvement Plan Support, Public Education and Training, Water Supply Advisory Committee, Legislation. Public Disclosure, Publications, Reg Reform, State Revolving Fund, Regulation Development, Policy/Procedures

Technical Support

Jim Hudson, Technical Support

Internet Address: jwh0303@hub.doh.wa.gov

(360) 753-9674 FAX (360) 586-5529

Safe Drinking Water Act Regulations, Source Monitoring/Waivers, Vulnerability, Hazardous Waste, Laboratory Coordination, Water Treatment Operation, Cross-Connection Control, Operator Certification

Peggy Johnson, Information/Management Support

(360) 753-3528 FAX (360) 586-5529

Internet Address: pgj0303@hub.doh.wa.gov

Data Management, Budget, Grants and Contracts

Assurance

Linda Chapman, Assurance

(360) 586-8946 FAX (360) 586-5529

Internet Address: lbc0303@hub.doh.wa.gov

Operating Permits, Safe Drinking Water Act Enforcement, Local Health Support

January 1997